



FEMA

November 1, 2004

Mr. Tim McGinty, Chief
Inspection and Communications Section (EPPO-A)
Emergency Preparedness Project Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. McGinty:

Enclosed is the Final Report for the Radiological Emergency Preparedness Plume Pathway Exercise conducted on August 17, 2004, for the Palisades Nuclear Power Plant.

No Deficiencies were identified during for this exercise. Two Areas Requiring Corrective Action (ARCA) were identified during this exercise. The first ARCA was identified at the Michigan State Police Evacuation and Access Control Point under Criterion 3.a.1, Implementation of Emergency Worker Exposure Control, wherein a Michigan State Trooper was not aware of the radiation administrative dose limits. The second ARCA was identified for the State of Michigan Department of Environmental Quality Field Monitoring Teams under Criterion 4.a.1, Plume Phase Field Measurements, wherein Field Monitoring Teams did not perform radiological survey instrument preoperational checks.

One prior ARCA remains unresolved for the State of Michigan at the Joint Public Information Center under Criterion 5.b.1, Emergency Information and Instructions for the Public and Media. One prior ARCA for the State of Michigan under Criterion 2.b.2, Protective Action Recommendations and Decisions, was resolved during this exercise. A detailed discussion of these issues can be found in Part IV of this Report.

Based on the results of the August 17, 2004, exercise, the offsite radiological emergency response plans and preparedness for the State of Michigan, and the Counties of Allegan, Berrien, and Van Buren, 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 Allegan, Berrien, and Van Buren, granted on July 2, 1982, remains in effect.

Copies of this report were transmitted to the Nuclear Regulatory Commission (NRC) Region III, the Department of Homeland Security's Federal Emergency Management Agency Headquarters, and the State of Michigan.

If you have any questions, please let me know or have a member of your staff contact William King at (312) 408-5575.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Buikema". The signature is fluid and cursive, with a large initial "E" and a long, sweeping underline.

Edward G. Buikema
Regional Director

Enclosure



FEMA

Final Exercise Report

Palisades Nuclear Power Plant

Licensee:	Nuclear Management Company
Exercise Date:	August 17, 2004
Report Date:	November 1, 2004

**U.S. DEPARTMENT OF HOMELAND SECURITY
FEMA REGION V
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521**

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I. EXECUTIVE SUMMARY

On August 17, 2004, an exercise was conducted in the plume exposure pathway emergency planning zone (EPZ) around the Palisades Nuclear Power Plant by the U.S. Department of Homeland Security's (DHS) – 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 DHS/FEMA's policies and guidance concerning the exercise of State and local Radiological Emergency Response Plans (RERPs) and procedures.

The most recent exercise at this site was conducted on June 4, 2002. The qualifying emergency preparedness exercise was conducted on December 9, 1980.

DHS/FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise. In the State of Michigan the risk counties of Allegan, Berrien, and Van Buren 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 on the part of all the participants was evident during this exercise.

This report contains the evaluation of the August 17, 2004, biennial exercise and the evaluation of the following out-of-sequence activities: Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees; Monitoring and Decontamination of Emergency Workers' Equipment and Vehicles; and Temporary Care of Evacuees (Congregate Care).

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 new Areas Requiring Corrective Action (ARCAs) were identified during this exercise. The first ARCA was identified at the Michigan State Police Evacuation and Access Control Point under Criterion 3.a.1, Implementation of Emergency Worker Exposure Control, wherein a Michigan State Trooper was not aware of the radiation administrative dose limits. The second ARCA was identified for the State of Michigan Department of Environmental Quality Field Monitoring Teams under Criterion 4.a.1, Plume Phase Field Measurements, wherein Field Monitoring Teams did not perform radiological survey instrument preoperational checks. One prior ARCA remains unresolved for the State of Michigan at the Joint Public Information Center under Criterion 5.b.1, Emergency Information and Instructions for the Public and Media. A detailed discussion of these issues can be found in Part IV of this Report.

II. INTRODUCTION

On December 7, 1979, the President directed DHS/FEMA to assume the lead responsibility for all off-site nuclear planning and response. DHS/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.

The DHS/FEMA Rule 44 CFR 350 establishes the policies and procedures for DHS/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.

DHS/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 DHS/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 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 DHS/FEMA Region V Regional Assistance Committee (RAC), which is chaired by DHS/FEMA.

Formal submission of the RERPs for the Palisades Nuclear Power Plant to DHS/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 DHS/FEMA on July 2, 1982, under 44 CFR 350.

A REP exercise was conducted on August 17, 2004, and evaluated by DHS/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 evaluation team, with final determinations made by the DHS/FEMA Region V RAC Chairperson, and approved by the Regional Director.

The criteria utilized in the DHS/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, if applicable, 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 August 17, 2004, 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 in the year 2000 was 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 August 17, 2004:

STATE OF MICHIGAN

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

Department of Transportation
Emergency Management Division
Family Independence Agency
Michigan State Police
Office of the Governor - Executive Office
Office of Services to the Aging

RISK JURISDICTIONS

ALLEGAN COUNTY

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

BERRIEN COUNTY

Emergency Management Division
Environmental 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
Police Services
Road Commission
Sheriff's Department
Social Services

VAN BUREN COUNTY

Emergency Management Division
Executive Group – Chief Elected Official
Family Independence Agency

Fire Services
Health Services
Human Services
Intermediate School District
Medical Services
Michigan State Liaison
Office of Services to the Aging
Public Works
Road Commission
Police Services
Sheriff's Office

PRIVATE/VOLUNTEER ORGANIZATIONS

Adventist Community Services
Allegan High School
Allegan Junior High School
Allegan County Sheriffs Posse (a.k.a. - L.E. White Junior High School)
Allegan Township Fire Department
American Red Cross
Consumers Energy
Eau Claire High School
Fennville Area Fire Department
Lake Michigan Community College
Lawrence High School
Nuclear Management Company
Pipestone – Berrien Township – Eau Claire Fire Department
Radio Amateur Civil Emergency Services
Seven Day Adventist
Southern Baptist Convention
St. Joseph Fire Department
Watervliet Fire Department
Watervliet High School
WSJM 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 exposure pathway exercise on August 17, 2004. Also included are times that notifications were made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: August 17, 2004, Palisades Nuclear Power Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken					
		State of Michigan EOC	Field Team Center	Allegan County EOC	Berrien County EOC	Van Buren County EOC	Joint Public Information Center
Unusual Event	0809	0823	---	0823	0837	0819	---
Alert	0835	0845	---	0858	0852	0845	---
Site Area Emergency	0935	0951	1008	0957	0958	0959	0937
General Emergency	1049	1059	1109	1109	1106	1109	1049
Simulated Radiation Release Started	1035	1035	1110	1107	1106	1109	1115
Simulated Radiation Release Terminated	---	---	---	---	---	---	---
Facility Declared Operational		0920	1012	0930	0945	0945	1002
State: Declaration of State of Disaster		---	---	1000	1005	1004	--
Local: Declaration of State of Emergency		1007	1016	1009	1012	1007	1007
Exercise Terminated		1300	1300	1254	1300	1240	1302
1 st Early Precautionary Action Decision (State Issues through JPIC) includes: Food & Feed Operators; Fruit & Vegetables; and Dairy & Livestock Herds for Areas 1, 2, 3 & 4 – all areas to 5 miles; and NE Sectors to 10 miles		1004	---	1032	1053	1040	1012
2 nd Early Precautionary Action Decision: Students evacuated from summer programs (Van Buren County)		---	---	---	---	1015	---
3 rd Early Precautionary Action Decision (State Issues through JPIC) includes: Dairy & Livestock Advisory added Area 5 & extended to 10 miles		1111	---	1129	1140	1130	1118
1 st Protective Action Order: Evacuate Areas 1, 2 & 3 and clearing of marine traffic/lake activity within 5 miles of the plant		1105	1109	1107	1111	1110	1107
1 st Siren Activation		---	---	---	---	1110	---
1 st EAS Message		---	---	---	---	1113	---
2 nd Protective Action Order: Evacuate Areas 1, 2, 3, 4, & 5 and clearing marine traffic/lake activity within a 10-mile radius of the plant		1203	1219	1206	1209	1206	1208
2 nd Siren Activation		---	---	---	---	1209	---
2 nd EAS Message		---	---	---	---	1216	---
KI Ingestion Decision for EWs in Areas 1, 2, & 3 to 5 miles		1129	1129	1134	1130	1135	---
KI Ingestion Decision for EWs in Areas 1, 2, 3, 4, & 5 to 10 miles		1210	1230	1212	1215	1216	---

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 August 17, 2004, 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 ARCA 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 Section IV.B.)
- Blank - Not scheduled for demonstration

Table 2. Summary Results of Exercise Evaluation

DATE AND SITE: August 17, 2004, Palisades Nuclear Power Plant (Sheet 1 of 3)

JURISDICTIONS/ FUNCTIONAL ENTITY	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	3.	3.	3.	3.	3.	3.	3.	3.	4.	4.	4.	4.	4.	5.	5.	5.	5.	6.	6.	6.	6.
	a.	b.	c.	d.	e.	a.	b.	b.	c.	d.	e.	a.	b.	c.	c.	d.	d.	e.	e.	f.	a.	a.	a.	b.	c.	a.	a.	a.	b.	a.	b.	c.
	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	2	1	2	1	1	2	3	1	1	1	2	3	1	1	1	1
STATE OF MICHIGAN																																
Initial Notification Point	M			M																												
Emergency Operations Center	M		M	M	M	M		M	M																M			M				
Technical Support Group					M	M	M	M															M									
Dosimetry/KI Verification Michigan State Police EMD Office					M																											
Joint Public Information Center			M	M	M																									U		
Public Inquiry Hotline																														M		
Michigan State Police - Evacuation & Access Control Point				M	M							A	M			M																
Department of Environmental Quality (DEQ) - Field Team Center				M	M	M	M					M	M										M									
DEQ - Field Monitoring Teams				M	M							M	M								A		M									
DEQ - EWs M&D (Coloma Maintenance Garage)					M							M																		M		
DEQ - EWs' Equipment & Vehicles M&D (Coloma Maintenance Garage)					M							M																			M	
DEQ - Support to Allegan County - EWs, Equipment, & Vehicles M&D (Allegan Twp Fire Dept.)					M							M																		M	M	
DEQ - Support to Allegan County Evacuees & Vehicles M&D (Allegan High School.)					M							M																			M	
DEQ - Support to Berrien County - EWs, Equipment, & Vehicles M&D (Watervliet Fire Dept.)					M							M																		M	M	
DEQ - Support to Berrien County - Evacuee & Vehicles M&D (Eau Claire High School)					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 exercise(s)

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

Table 2. Summary Results of Exercise Evaluation

DATE AND SITE: August 17, 2004, Palisades Nuclear Power Plant (Sheet 2 of 3)

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			
<u>RISK COUNTIES</u>																																				
<u>ALLEGAN COUNTY</u>																																				
Initial Notification Point	M			M																																
Emergency Operations Center	M	M	M	M	M							M	M	M		M	M										M		M							
Joint Public Information Center				M																										M						
Evacuation & Access Control Point				M	M							M	M			M																				
Emergency Workers M&D (Allegan Twp. Fire Dept.)					M							M																			M					
EWs' Equipment & Vehicles M&D (Allegan Twp. Fire Dept.)																																M				
Evacuee & Vehicles M&D & Public Registration (Allegan High School.)					M							M																			M					
Congregate Care Center (Allegan Jr. High School)																																		M		
<u>BERRIEN COUNTY</u>																																				
Initial Notification Point	M			M																																
Emergency Operations Center	M		M	M	M							M			M	M	M										M		M							
Joint Public Information Center				M																									M							
Evacuation & Access Control Point																M																				
EWs M&D (Watervliet Fire Dept.)					M							M																			M					
EWs' Equipment & Vehicles M&D (Watervliet Fire Dept.)																																M				
Evacuee & Vehicles M&D & Public Registration (Eau Claire High School)					M							M																			M					
Congregate Care Ctr (Eau Claire HS)																																			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 exercise(s)

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

Table 2. Summary Results of Exercise Evaluation

DATE AND SITE: August 17, 2004, Palisades Nuclear Power Plant (Sheet 3 of 3)

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				
<u>VAN BUREN COUNTY</u>																																					
Initial Notification Point	M			M																																	
Emergency Operations Center	M		M	M	M							M		M	M	M	M										M			M							
Dosimetry/KI Distribution - EOC					M							M																									
Joint Public Information Center	M			M																										M							
EAS Radio Station - WSJM																											M										
Evacuation & Access Control Point				M	M							M	M			M																					
Congregate Care Center (Lawrence High School)																																				M	

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 exercise(s) 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 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 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 ARCAs – Resolved** – Descriptions of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.
- **Prior ARCAs – 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 maybe 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."

The 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 also is 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 Code.
- **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. Planning Issues are reported to the State(s) via a letter from the Regional Director. Therefore, standardized issue numbers are not assigned to Planning 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.c.1; 1.d.1; 1.e.1; 2.a.1; 2.b.2; 2.c.1; 5.a.1; and 5.b.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUE – RESOLVED: 2.b.2

Issue No: 23-04-2.b.2-A-01

Description: The Agriculture Advisories for Food Establishments, Feed Operators, and Facilities were issued at the same time (1200 and 1252 hours) the general public was being instructed to evacuate.

Corrective Action Demonstrated: The initial set of Agriculture Advisories for Food Establishments, Feed Operators, Fruit and Vegetable Growers and Distributors, and Farmers, Gardeners and Produce Stand Operators were issued simultaneously at 1004 hours during the Site Area Emergency, Emergency Classification Level (ECL). A subsequent Agriculture Advisory expanded the affected area to include Area 5 and was issued at 1111 hours during the General Emergency ECL. Both actions were taken well-ahead of dose projections of future off-site contamination that would exceed Environmental Protection Agency Protective Action Guides. The initial set of advisories was issued at 1004 hours, and the first Protection Action Order (PAO) by the Governor's Authorized Representative was issued at 1105 hours. The advisory (at 1111 hours)

expanding the affected area likewise was issued well-ahead of the second PAO decision (at 1203 hours). These timely actions would have given the various producers and vendors adequate time to implement the actions identified in the advisories; therefore, prior ARCA 23-04-2.b.2-A-01 is resolved

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

1.3 Technical Support Group

- a. **MET: Criteria 1.e.1; 2.a.1; 2.b.1; 2.b.2; and 4.a.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 Dosimetry/Potassium Iodide (KI) Verification, Michigan State Police Emergency Management Division Office

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

1.5 Joint Public Information Center

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

- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: 5.b.1**

Issue No: 23-04-5.b.1-A-02

Description: Two of the three press releases issued by the Joint Public Information Center (JPIC) contained incomplete or inconsistent information.

Reason Previous ARCA Unresolved: Two news releases contained insufficient information detail about protective actions to be taken by the public. Specifically, News Release 6 and 7 did not specify the routes for evacuees to take and the locations of reception and congregate care centers; News Release 6 also did not provide detailed boundary descriptions. In addition, no news release was issued indicating that, at 1111 hours, the livestock advisory had been extended to include Area 5. Hard copies of Emergency Alert System (EAS) messages, which contained evacuation route information, were not provided to the media. While much of the detailed evacuation information was presented orally at briefings, too much information was provided verbally to be absorbed in that form.

Recommendation: The JPIC staff should ensure that accurate and complete information is provided to the media. All EAS Messages and Special News Broadcasts should be provide (hardcopy) to the media. Detailed boundary descriptions of evacuated areas, evacuation routes, and the locations of reception and congregate care centers should be provided in written form to help assure that it is, in turn, provided to the public in a complete, accurate, and timely manner.

Schedule of Corrective Actions: JPIC procedures are being revised to require that written press releases include reception and congregate care center locations, changes to agricultural advisories, evacuation routes, and protective action area boundaries. Current procedures require that this information be provided, but do not specify that this occur in written form.

Procedure modifications will be complete by December 31, 2004 and will be provided to state JPIC staff when revisions occur. This issue will be incorporated into 2005 JPIC personnel training.

1.6 Public Inquiry Hotline

- a. **MET: Criterion 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**

1.7 Michigan State Police Evacuation and Access Control Point

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

Issue No: 44-04-3.a.1-A-01

Condition: The Michigan State Police Trooper assigned to a State Traffic and Access Control Point was not aware of his radiation administrative dose limits.

Possible Cause: The Trooper did not receive a briefing concerning emergency exposure control when issued his dosimetry equipment. In addition, he was not provided with written guidance on administrative dose limits with the dosimetry equipment.

Reference: NUREG-0654, K.3.a., b. The Michigan Emergency Management Plan, Nuclear Power Plant Accidents Section, Nuclear Medical Support Subsection (page 208, February 2004). The emergency worker dose limits are contained in Attachment V of the MDEQ Nuclear Facilities Emergency Response Plan (Rev. 6, February 2003).

Effect: During an actual nuclear power plant accident, emergency workers could exceed the dose limits specified in the plan.

Recommendation: Emergency workers should be briefed concerning dosimetry and emergency worker exposure control prior to being dispatched to the field. Both dosimetry distribution personnel and emergency workers should understand the need to be aware of administrative dose limits. Emergency workers should receive written instructions on the dose limits before being dispatched to their field assignments.

Schedule of Corrective Actions: Michigan Department of Environmental Quality (MDEQ) procedures require that dosimetry distribution personnel brief individuals being assigned to the field prior to dispatch. Dosimetry distribution personnel will be trained with an emphasis on the need to inform all field personnel of administrative dose limits prior to dispatch and on the need to provide written instructions on dose limits.

Department of State Police personnel will be provided training on dose limits and provided written guidance prior to December 31, 2004.

Personnel involved in dosimetry briefings have been informed of the need to conduct the briefing and on the need to provide written guidance via email. These requirements will also be stressed during training in 2005

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

1.8 Department of Environmental Quality (DEQ) State Activities

1.8.1. DEQ - Field Team Center

- a. MET: Criteria 1.d.1; 1.e.1; 2.a.1; 2.b.1; 3.a.1; 3.b.1; and 4.a.2
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES - RESOLVED: NONE
- f. PRIOR ISSUES - UNRESOLVED: NONE

1.8.2. DEQ - Field Monitoring Teams

- a. MET: Criteria 1.d.1; 1.e.1; 3.a.1; 3.b.1; and 4.a.3
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: 4.a.1.

Issue No: 44-04-4.a.1-A-02

Condition: Two of the three Field Monitoring Teams (Teams 2 & 3) did not properly perform radiological survey instrument preoperational checks.

Possible Cause: Survey instrument detectors were not held in contact with the radioactive Cesium source, and responses were not verified to ensure they were within the acceptable range(s) posted on the side of each

instrument. In addition, one detector had an out-of-date calibration sticker, indicating that it had last been checked more than 12 months ago. The detector was used to count air samples. The calibration date on the sticker was February 13, 2003; however, the actual detector calibration date was February 23, 2004, as verified after the exercise by Department of Environmental Quality personnel.

Reference: NUREG 0654, H.10; Michigan Department of Environmental Quality, Field Team Center Procedure

Effect: Survey instruments must be in current calibration and must be verified against a repeatable standard in order to ensure that the instrument/detector is operating accurately. If an instrument does not accurately respond to a known radiation field, the data generated from that instrument could result in the formulation of inappropriate Protective Action Recommendations.

Recommendation: Ensure that field team members properly perform instrument preoperational checks prior to use and replace or seek resolution for instruments that do not have current calibration dates. Provide additional detail on the Eberline E-600 instruction sheet (Operations Section 3.d). Do not use an instrument if the check source response is outside the range listed on the side of the instrument.

Schedule of Corrective Actions: MDEQ will ensure that field team members are properly trained on the need to perform instrument preoperational checks prior to use and replace or seek resolution for instruments that do not have current calibration dates or when the check source response is outside the range listed on the side of the instrument.

MDEQ procedures were revised to include additional detail on the Eberline E-600 instrument sheet on September 2, 2004.

Field team personnel have been informed of the need to perform instrument preoperational checks prior to use and to replace or seek resolution for instruments that do not have current calibration dates or when the check source response is outside the range listed on the side of the instrument. This information was conveyed via email and will be stressed during training in 2005.

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

1.8.3. DEQ - Emergency Workers (EW) Monitoring and Decontamination - Coloma Maintenance Garage

- a. MET: Criteria 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

1.8.4. DEQ – EWs’ Equipment and Vehicles Monitoring and Decontamination - Coloma Maintenance Garage

- a. MET: Criteria 1.e.1; 3.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

1.9. DEQ - Support to Allegan County Emergency Workers, Equipment, and Vehicles Monitoring and Decontamination –Allegan Fire Department

- a. MET: Criteria 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 - Support to Allegan County Evacuees and Vehicles Monitoring and Decontamination - Allegan High School

- a. MET: Criteria 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

1.11 DEQ - Support to Berrien County Emergency Workers, Equipment, and Vehicles Monitoring and Decontamination - Watervliet Fire Department

- a. MET: Criteria 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

1.12 DEQ - Support to Berrien County Evacuees and Vehicles Monitoring and Decontamination - Eau Claire High School

- a. MET: Criteria 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. RISK COUNTIES

2.1 ALLEGAN 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; 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: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.3 Joint Public Information Center

- 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**

2.1.4 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

2.1.5 Emergency Workers (EWs) Monitoring and Decontamination - Allegan Township Fire Department

- a. MET: Criteria 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

2.1.6. EWs' Equipment and Vehicles Monitoring and Decontamination - Allegan Township Fire Department

- a. MET: Criterion 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

2.1.7 Evacuee and Vehicles Monitoring and Decontamination, and Public Registration - Allegan High School

- a. MET: Criteria 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 Congregate Care Center, Allegan Junior High School

- a. MET: Criterion 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 BERRIEN 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.c.1;1.d.1; 1.e.1;3.a.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

2.2.3 Joint Public Information Center

- 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

2.2.4 Evacuation and Access Control Point

- a. MET: Criterion 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 Emergency Workers (EW) Monitoring and Decontamination - Watervliet Fire Department

- a. MET: Criteria 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

2.2.6 EWs' Equipment and Vehicles Monitoring and Decontamination - Watervliet Fire Department

- a. MET: Criterion 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

2.2.7 Evacuee and Vehicles Monitoring and Decontamination, and Public Registration - Eau Claire High School

- a. MET: Criteria 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 Congregate Care Center - Eau Claire High School

- a. MET: Criterion 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 VAN BUREN 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.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; 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

2.3.3 Dosimetry/KI Distribution - Emergency Operations Center

- a. MET: Criteria 1.e.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**

2.2.4 Joint Public Information Center

- a. **MET: Criteria 1.a.1; 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**

2.2.5 Emergency Alert System Radio Station - WSJM

- a. **MET: Criterion 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**

2.2.6 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**

2.2.7 Congregate Care Center - Lawrence High School

- a. **MET: Criterion 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**

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

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
DHS	Department of Homeland Security
DOT	Department of Transportation
EAS	Emergency Alert System
EMD	Emergency Management Division
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Emergency Operations Plan
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	milliRoentgens
mR/hr	milliRoentgens per Hour
MS-1	Medical Services Drill
MSP	Michigan State Police

N/A	Not Applicable
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
OSC	Operational Support Center
PAO	Protective Action Order
PAR	Protective Action Recommendation
PCS	Primary Coolant System
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
SED	Site Emergency Director
SEOC	State Emergency Operations Center
SGTS	Standby Gas Treatment System
T/L	Team Leader
TCP/ACP	Traffic/Access Control Point
TSC	Technical Support Center

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Palisades Nuclear Power Plant exercise on August 17, 2004. Evaluator Team Leaders are indicated by the letters "(TL)" after their names. The organization which each evaluator represents is indicated by the following abbreviations:

DHS/FEMA Department of Homeland Security/Federal Emergency Management Agency
 ICF ICF Consulting

<u>TITLE</u>	<u>NAME</u>	<u>ORGANIZATION</u>
Exercise Director	William King	DHS/FEMA
<u>EVALUATION SITE</u>		
STATE OF MICHIGAN		
Initial Notification Point	William Edmonson	ICF
Emergency Operations Center	Carl Bebrich (TL) William Edmonson	DHS/FEMA ICF
Technical Support	Richard Grundstrom	ICF
Dosimetry/KI Verification	Richard Grundstrom	ICF
Joint Public Information Center	Michael Meshenberg	ICF
Public Inquiry Hotline	Ed Wojnas	ICF
Michigan State Police, Evacuation and Access Control Point	Ron Hatcher	DOT
DEQ - Field Team Center	Hollis Berry	ICF
DEQ - Field Team 1	Roland Lickus	NRC
DEQ - Field Team 2	Marcy Campbell	ICF
DEQ - Field Team 3	James Hickey	ICF
DEQ - EWs Monitoring & Decontamination	Marcy Campbell	ICF
DEQ - EWs' Equipment & Vehicles Monitoring & Decontamination	James Hickey	ICF

DEQ - Support to Allegan County EWs Monitoring & Decontamination - Allegan Township Fire Department	William Neidermeyer	ICF
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DEQ - Support to Allegan County EWs' Equipment & Vehicles Monitoring & Decontamination - Allegan Township Fire Department	Dave Stuenkel	ICF
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DEQ - Support to Allegan County Evacuees & Vehicles Monitoring & Decontamination - Allegan High School	Dave Stuenkel	ICF
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DEQ - Support to Berrien County EWs Monitoring & Decontamination - Watervliet Fire Department	Dave Duncan	ICF
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DEQ - Support to Berrien County EWs' Equipment & Vehicles Monitoring & Decontamination - Watervliet Fire Department	Harold Spedding	ICF
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DEQ - Support to Berrien County Evacuees & Vehicles Monitoring & Decontamination - Eau Claire High School	Harold Spedding	ICF
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ALLEGAN COUNTY

Initial Notification Point	Jan Jackson	ICF
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Emergency Operations Center	Gary Naskrent (TL)	DHS/FEMA
	Theodore Jakubowski	ICF
	Jan Jackson	ICF

Joint Public Information Center	Pat Tenorio	DHS/FEMA-HQ
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Evacuation & Access Control Point	Seth Kelly	ICF
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EWs Monitoring & Decontamination - Allegan Township Fire Department	William Neidermeyer	ICF
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Evacuee & Vehicles Monitoring & Decontamination, and Registration - Allegan High School	Edward Wojnas	ICF
	Dave Stuenkel	ICF

Congregate Care Center – Allegan Junior High School	Seth Kelly	ICF
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BERRIEN COUNTY

Initial Notification Point	Roy Smith	ICF
Emergency Operations Center	Terri Connors-Hartman (TL) Carolyn Sturghill Roy Smith	DHS/FEMA DHS/FEMA ICF
Joint Public Information Center	Pat Tenorio	DHS/FEMA-HQ
Evacuation & Access Control Point	Roy smith	ICF
EWs Monitoring & Decontamination – Watervliet Fire Department	Dave Duncan	ICF
EWs' Equipment & Vehicles Monitoring & Decontamination – Watervliet Fire Department	Harold Spedding	ICF
Evacuee & Vehicles Monitoring & Decontamination, & Registration – Eau Claire High School	Glenn Kinnear Harold Spedding	ICF
Congregate Care Center	Michael Meshenberg	ICF

VAN BUREN COUNTY

Initial Notification Point	Dale Petroff	ICF
Emergency Operations Center	Sandra L. Bailey (TL) Ron Hatcher Dale Petroff Lawrence Visniesky	DHS/FEMA DOT ICF ICF
Dosimetry/KI Distribution – EOC	Dale Petroff	ICF
Joint Public Information Center	Pat Tenorio	DHS/FEMA-HQ
Emergency Alert System Radio Station – WSJM	Glenn Kinnear	ICF
Evacuation & Access Control Point	Albert Lookabaugh	ICF
Congregate Care Center	Albert Lookabaugh	ICF

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 August 17, 2004, and the off-site extent-of-play agreement approved by DHS/FEMA Region V on August 4, 2004.

The exercise criteria, contained in DHS/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 DHS/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 OBJECTIVES

August 17, 2004

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

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 those reporting to county EOCs, the Field Team Center, and the JPIC. State personnel reporting to the county EOCs will be pre-positioned at the State Police 5th or 6th District Headquarters and will report when mobilized by the SEOC. State personnel reporting to the JPIC will begin participation 30 minutes after the arrival of county JPIC personnel. State Field Team Center personnel will begin participation 30 minutes after the decision to activate the facility. State 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 Allegan County personnel reporting to the JPIC, who will be pre-positioned and will begin participation 30 minutes after the arrival of other county JPIC personnel. All personnel involved in out of sequence demonstrations will be pre-positioned. Rosters will be provided to demonstrate 24-hour staffing for the county EOCs.

The Berrien County EOC will be partially activated and mobilized in accordance with procedures. JPIC personnel will be 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 was demonstrated by all three counties and the State of Michigan during the Palisades exercise on June 4, 2002. Setup will occur in sequence with the scenario as required.

Allegan County has a new EOC, which will be evaluated by FEMA.

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 county EOCs, the SEOC, and in all out of sequence demonstrations.

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 by each county EOC, the SEOC, the Field Team Center, field teams, JPIC and Access Control. If both the primary and back-up systems fail, this objective may be demonstrated by successful use of an alternate method of communication.

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, and county EOCs. Personnel involved in traffic and access control points will demonstrate knowledge of where to secure traffic control equipment. Potassium iodide and dosimetry are stored at each county's emergency management office 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. Documentation related to KI shelf life extension is maintained by MSP/EMD and was provided during the Fermi 2 REP Exercise on March 23, 2004.

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. If the scenario does not provide an opportunity to demonstrate these items, a controller inject will be issued to demonstrate the ability to perform these actions.

This criterion does not apply to counties.

This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Regional Assistance Committee.

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 Field Team Center provided information and complete an independent analysis of scenario data. Dose assessment program competence will be demonstrated at the Field Team Center.

This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Regional Assistance Committee.

This criterion does not apply to 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 may be re-demonstrated as approved on a case-by-case basis by the Chair of the Regional Assistance Committee.

This criterion does not apply to 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 through the decision to recommend the use of KI to institutionalized persons.

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 county EOCs. No phone calls to transportation dependent persons will be made.

The School Services Representatives in the Allegan and Van Buren County EOCs will make phone contact with affected school districts if schools are in session. No scenario information will be discussed during these calls.

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.

This criterion will be demonstrated by the State of Michigan at the Field Team Center and by Allegan and Berrien Counties during out of sequence reception center, decontamination center, and Allegan, and Van Buren County access control point demonstrations when dosimetry is issued for use by emergency workers.

This objective maybe re-demonstrated immediately for credit, at the discretion of the evaluator.

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 criterion will be demonstrated during the traffic and access control demonstrations for Allegan and Van Buren Counties and the State of Michigan. Response personnel will demonstrate knowledge of when it is appropriate to take KI, but not actually ingest it.

KI will be distributed to emergency workers in Allegan and Van Buren Counties along with their dosimetry. The State will demonstrate this objective at the Field Team Center and through decision-making and directives 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 county EOCs via EOC staff discussions which may include evacuation of hospitals, nursing homes, correctional facilities, mobility impaired individuals, and transportation dependent. These discussions will be documented in situation logs. Actual contacts to special population groups will not be made. Allegan and Van Buren Counties will contact a minimum of four providers of transportation services, which may include public transit authorities, school systems for buses, ambulance services, or fire/rescue services. An attempt will be made to contact a third of the total number of transportation providers. 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 Berrien and Van Buren County EOCs as driven by the scenario. If schools are not in session, the FEMA evaluator will conduct an interview with the schools representative in the county EOCs.

An EV-2 interview will be conducted in Berrien and Van Buren Counties. 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 Allegan, Berrien and Van Buren County EOCs. Allegan County, Van Buren County, and the State of Michigan will each demonstrate one traffic and access control point. 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.

This criterion may be re-demonstrated immediately for credit, at the discretion of the evaluator.

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

This will be demonstrated through discussions at the county EOCs. Messages will be injected by State Controllers to drive these demonstrations. Personnel will deal with the impediments by discussing the need for equipment, discussing its estimated time of arrival, etc. The State of Michigan 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. All contacts, actual or simulated will be logged.

This criterion may be re-demonstrated immediately for credit, at the discretion of the evaluator.

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 be demonstrated during this exercise at the Field Team Center by State personnel. Three field teams will demonstrate this criterion.

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 be demonstrated during this exercise at the Field Team Center.

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 be demonstrated during this exercise at the Field Team Center.

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 Department is the primary activation point for the public warning sirens. Van Buren County also activates the Emergency Alert System. The State will provide information to each county for release in the Emergency Alert System messages. Allegan and Berrien Counties will provide information to Van Buren County as needed for inclusion in EAS messages. An interview with WSJM personnel will be conducted by FEMA following transmittal of EAS messages.

This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Regional Assistance Committee.

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.

The Palisades EPZ does not contain any FEMA approved exception areas. If a siren failure occurs, the affected county EOC will demonstrate actions to notify the public in areas where siren coverage is not adequate.

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 and county EOCs. All media briefings will be conducted at the JPIC.

A public inquiry hotline will be operated by Consumers Energy during the exercise by personnel based at the Service Center in Grand Rapids. Trending is performed by the Public Inquiry Coordinator, who identifies trends and ensures appropriate information is provided to the public inquiry operators and the JPIC for inclusion in press briefings.

This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Regional Assistance Committee.

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.

Allegan and Berrien Counties will fully demonstrate separate emergency worker and public reception/decontamination centers out-of sequence from the exercise. State DEQ HP personnel will provide assistance as requested during these demonstrations. Public reception centers will demonstrate 1/3 of the monitoring teams required to monitor 20% of the population allocated to that facility within a 12 hour time period. Each team will monitor six individuals. The State of Michigan Field Team Center will demonstrate emergency worker decontamination.

Van Buren County will not demonstrate this criterion.

This criterion may be re-demonstrated immediately for credit, at the discretion of the evaluator.

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.

Allegan and Berrien Counties will each fully demonstrate an emergency worker/equipment 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 this demonstration. The State of Michigan Field Team Center will also demonstrate this criterion.

Van Buren County will not demonstrate this criterion.

This criterion may be re-demonstrated immediately for credit, at the discretion of the evaluator.

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.

Allegan, Berrien and Van Buren Counties will each fully demonstrate a congregate care center out of sequence with the exercise. This facility will be set up in advance of the demonstration. Personnel manning the center will not go through alert, mobilization, activation, or shift changes.

This criterion may be re-demonstrated immediately for credit, at the discretion of the evaluator.

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 on October 20, 2004.

This criterion may be re-demonstrated immediately for credit, at the discretion of the evaluator.

PALISADES NUCLEAR POWER PLANT EXERCISE
August 17, 2004

STATE FACILITIES				
FACILITY	ADDRESS	CONTACT	ACTIVATION	NOTES
SEOC	4000 Collins Road Lansing, MI	Tony Katarsky 517-333-5024	In sync with scenario.	Will demonstrate A&N.
FIELD TEAM CENTER	MDOT Coloma Maintenance Garage 3880 Red Arrow Hwy Coloma, MI	Lou Brandon 517-241-1277	In sync with scenario.	Pre-positioned. Will begin participation 30 minutes after decision to activate.

CONSUMERS ENERGY COMPANY FACILITIES				
FACILITY	ADDRESS	CONTACT PERSON	ACTIVATION TIME	NOTES
JPIC	Lake Michigan Community College 2755 East Napier Rd Benton Harbor, MI	Mark Wesley 517-333-5023	Not prior to Alert declaration	Facility will be set up in advance.
PUBLIC INQUIRY HOTLINE CENTER	Grand Rapids Service Center 4000 Clay Ave SW. Grand Rapids, MI	Mark Savage 269-764-2333	In sync with scenario.	Facility permanently set up.

INITIAL NOTIFICATION POINTS				
FACILITY	ADDRESS	CONTACT PERSON	ACTIVATION TIME	NOTES
STATE OF MICHIGAN	MSP Operations 714 S Harrison Road East Lansing, MI	Lieutenant on duty	In sync with scenario	Evaluator must identify self at gate to gain access.
VAN BUREN COUNTY	Van Buren County Sheriff Dept 121 Paw Paw Street Paw Paw, MI	Officer on duty	In sync with scenario	Evaluator must identify self at desk to gain access and to officer on duty.
ALLEGAN COUNTY	Allegan County Sheriff Department 112 Walnut Street Allegan, MI	Officer on duty	In sync with scenario	Evaluator must identify self at desk to gain access and to officer on duty.
BERRIEN COUNTY	Berrien County Sheriff Department 919 Port Street St Joseph, MI	Officer on duty	In sync with scenario	Evaluator must identify self at desk to gain access and to officer on duty.

PALISADES NUCLEAR POWER PLANT EXERCISE
August 17, 2004

ALLEGAN COUNTY				
FACILITY	ADDRESS	CONTACT PERSON	ACTIVATION TIME	NOTES
EOC	Allegan County Courthouse 113 Chestnut Allegan, MI	Dan Wedge 269-673-0571-Office	In sync with scenario	
Dosimetry	Allegan County Courthouse 113 Chestnut Allegan, MI	Dan Wedge 269-673-0571-Office	In sync with scenario	
Emergency Worker Decontamination	Allegan Twp FD 3037 118 th St. Allegan, MI.	Dan Wedge 269-673-0571-Office	August 16, 2004 7:00 PM	
Public Reception/ Decontamination Center	Allegan High School 1560 M-40 North Allegan, MI.	Dan Wedge 269-673-0571-Office	August 17, 2004 7:00 PM	
Public Congregate Care Center	L.E. White Jr. High School (Allegan Jr. High) 1560 M-40 North Allegan, MI.	Dan Wedge 269-673-0571-Office	August 17, 2004 4:00 PM	
Access Control	As decided by FEMA Evaluator	Law Enforcement Representative in the EOC	In sync with scenario	

PALISADES NUCLEAR POWER PLANT EXERCISE
August 17, 2004

BERRIEN COUNTY				
FACILITY	ADDRESS	CONTACT PERSON	ACTIVATION TIME	NOTES
EOC	Berrien County Sheriff Department 919 Port Street St Joseph, MI	Lt. Mike Bradley 269-983-7141 x7216	In sync with scenario	Will not demonstrate A&N
Dosimetry	EOC interview	RADPRO Representative in the EOC.	During or following the exercise	
Emergency Worker Decontamination	Watervliet FD. 217 W Pleasant St Watervliet, MI	Lt. Mike Bradley 269-983-7141 x7216	August 16, 2004 7:00pm	
Public Reception/ Decontamination Center	Eau Claire High School 7450 Hochberger Rd. Eau Claire MI.	Lt. Mike Bradley 269-983-7141 x7216	August 17, 2004 7:00pm	
Public Congregate Care Center	Eau Claire High School 7450 Hochberger Rd. Eau Claire MI.	Lt. Mike Bradley 269-983-7141 x7216	August 17, 2004 4:00:00 pm.	
Access Control	As decided by FEMA Evaluator	Law Enforcement Representative in the EOC	In sync with scenario	

PALISADES NUCLEAR POWER PLANT EXERCISE
August 17, 2004

VAN BUREN COUNTY				
FACILITY	ADDRESS	CONTACT PERSON	ACTIVATION TIME	NOTES
EOC	Courthouse Annex 121 E. Paw Paw St Paw Paw, MI	Al Svilpe 269-657-7786	In sync with scenario.	Will demonstrate A&N.
Dosimetry	Van Buren County Health Department 57418 CR 681 Hartford, MI	Sue Bailey 269-621-3143	August 17, 2004 1:30 pm	Interview
Emergency Worker and Vehicle Decontamination	N/A	N/A		Per the 6-year cycle, Emergency Worker and Vehicle Decontamination will not be demonstrated this exercise
Public Reception/ Decontamination	N/A	N/A		Per the 6-year cycle, Public Reception/ Decontamination will not be demonstrated this exercise.
Public Reception/ Vehicle Decontamination	N/A	N/A		Per the 6-year cycle, Public Reception/ Vehicle Decontamination will not be demonstrated this exercise.
Public Congregate Care	Lawrence High School 650 W. St. Joseph St. Lawrence, MI.	Richard Stoll 269-674-8233 Al Svilpe 269-657-7786	August 17, 2004 4:00pm	
Access Control	Demonstration will begin at the EOC.	Law Enforcement Representative in the EOC.	In sync with scenario.	
EAS Interview	WSJM Radio 580 E. Napier Benton Harbor, MI	Jim Gifford 269-925-1111	In sync with scenario.	

PALISADES NUCLEAR POWER PLANT EXERCISE
August 17, 2004

DATE	ALLEGAN	BERRIEN	VAN BUREN
8/16/04			1400 FEMA Pre-Exercise Briefing Tony Katarsky/Bonnie Sheffield
	1900 Emergency Worker and Vehicle Decontamination at Allegan Twp. FD. Tony Katarsky	1900 Emergency Worker Decontamination Watervliet FD. Bonnie Sheffield & Phyllis Barker	
8/17/04	Access Control In-sync	Access Control In-sync	Access Control In-sync
	Dosimetry Interview In-sync	Dosimetry Interview In-sync	August 17, 2004 1:30 pm
			EAS Interview In-sync WCSY in South Haven
	EOC In-sync	EOC In-sync	EOC In-sync
	1600 Public Congregate Care Allegan Jr. High School Bonnie Sheffield	1600 Public Congregate Care Eau Claire High School Tony Katarsky	1600 Public Congregate Care Lawrence High School Phyllis Barker
	1900 Public Reception/ Decontamination Allegan High School Bonnie Sheffield & Phyllis Barker	1900 Public Reception & Decontamination Eau Claire High School Tony Katarsky	
10/20/04			0800 MS-1 South Haven Hospital Covert Ambulance South Haven MI Bonnie Sheffield
10/21/04			0900 EV-2 Interview South Haven Public Schools Bonnie Sheffield/ Phyllis Barker
10/21/04		1300 EV-2 Interview Watervliet Public Schools Bonnie Sheffield/ Phyllis Barker	

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events that was used as the basis for invoking emergency response actions by OROs in the Palisades Nuclear Power Plant exercise on August 17, 2004.

The plume exercise scenario was submitted by the State of Michigan and Detroit Edison Company, and approved by FEMA Region V on January 30, 2004.

During the exercise, 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

The Operating Crew will assume the watch with the plant at full power. Wind is from 210°, SSW at -15 mph. Low Pressure Safety Injection Pump P-67A is tagged out for maintenance. 6½ days remain of the 7-day Tech Spec Action statement and motor alignment/coupling activities are in-progress. Due to exceeding the allowed cool down rate in a recent maintenance outage the LCO Annex is carrying an item to limit the PCS cool down rate to 40°F/hr per the Reactor Vessel analysis completed in accordance with Tech Spec 3.4.3. A small seismic event will trip the Roosevelt and Cook #1 lines in the switchyard. Three Cooling Tower fans will also trip. The event will be evident on the PPC via small oscillations in the Safety Injection and Safety Injection Refueling Water tank levels. The Control Room will receive concurrent phone calls from the Outside Auxiliary Operator and the Duty On-Call Superintendent confirming a seismic event has been felt on-site. The Shift Manager will declare an Unusual Event (UE) under the Natural Phenomenon Category. The crew will enter ONP-12, "Acts of Nature". Following the declaration and notification of the UE to off-site agencies a 70 gpm Steam Generator Tube Rupture will occur in the 'B' Steam Generator (S/G) over the course of one minute. The crew will enter ONP-23.2, "Steam Generator Tube Leak" and quickly transition to EOP-1.0, "Standard Post Trip Actions" as the tube rupture exceeds the ONP trip criteria. The Shift Manager will declare an Alert under the Primary Coolant System (PCS) Integrity Category. Upon completion of the EOP-1.0 verbal verifications the crew will transition to EOP-5.0, "Steam Generator Tube Rupture". The Shift Manager will turn over Site Emergency Director (SED) responsibilities to the Technical Support Center (TSC) SED. The crew will initiate a 40°F/hr cool down rate for the PCS and isolate the 'B' S/G. As the PCS cool down continues the TSC will assume Command and Control. Concurrently the Emergency Operations Facility (EOF) will staff and activate. When the EOF is fully staffed the EOF Director will take turnover from the SED and assume Command and Control. The Steam Generator Tube Rupture will rapidly grow to 600 gpm over the course of one minute. Either the Site Emergency Director or the EOF Director, depending on where they are in the turnover process, will declare a Site Area Emergency under the PCS Integrity Category. A seismic aftershock will fail fuel and fail open a 'B' S/G Code Safety Relief Valve. The EOF Director will declare a General Emergency under the Fission Product Barriers/Fuel Damage

Category. The Initial Protective Action Recommendation (PAR) will affect Areas 1, 2 and 3 of the 10-Mile Emergency Planning Zone (EPZ). Approximately one hour later Main Steam Line Radiation Monitor RIA-2323 will rise substantially. The EOF Director will deliver a Follow-up PAR that will include Areas 4 and 5 of the EPZ. With the State of Michigan Emergency Operations Center Drill Controllers' concurrence the drill will terminate.

Timeline

- 0800 Operating crew turnover - crew assumes the watch.
- 0805 Small seismic event trips Roosevelt Line and Cook Line #1 - Safety Injection Tank and Safety Injection Refueling Water Tank levels oscillate slightly - three C/T Fans trip. Message #1 - Crew notified of seismic event felt on-site via concurrent phone calls from Outside AO and D&C Superintendent. Crew enters ONP-12, "Acts of Nature".
- 0806 Message #2 - Simulator Controller supplies crew with alternate phone number for National Earthquake Information Center in Colorado. Message #3 - Center confirms small seismic event but has no magnitude information at this time.
- 0820 **Unusual Event** declared due to seismic event under Natural Phenomenon. Contingency Message #4 may be delivered to the Auxiliary Operators as appropriate for the crews' actions.
- 0830 Steam Generator Tube Rupture occurs in the 'B' Steam Generator - ramps to 70 gpm in 1 minute. Crew enters ONP-23.2, "Steam Generator Tube Leak" and transitions to EOP-1.0. "Standard Post Trip Actions".
- 0835 Reactor Trip - Alert declared due to excessive PCS leakage under PCS Integrity. Cool down limited due to exceeding PCS C/D rate during previous maintenance outage. Plant Area Radiation Monitor will alarm. Contingency Messages #5 for the HP Technicians, #6 for the Operating Crew and #7 for the SED and/or the Shift Manager may be delivered at this time. Crew transitions to EOP-5.0, "Steam Generator Tube Rupture".
- 0850 Message #8 - When Safety Injection occurs the TSC will lose (pre-identified) equipment.
- 0900 Message #9 - When the Operating Crew restores 'E' Bus and LC77, restore the TSC equipment.
- 0930 Steam Generator Tube Rupture rises to 600 gpm. (Rise to 1000 gpm if crew still has HPSI in-service)
- 0935 **Site Area Emergency** declared due to PCS leakage in excess of Charging Pump capacity under PCS Integrity.
- 1035 Seismic aftershock damages fuel and fails open a 'B' S/G Code Safety Valve. Safety Injection Tank and Safety Injection Refueling Water Tank levels oscillate again - a little larger oscillation this time. Message #10 delivered to all ERFs that the building has just shaken. Crew transitions to EOP-9.0, "Functional Recovery Procedure".

- 1040 **General Emergency** declared due to three failed fission product barriers under Fission Product Barriers/Fuel Damage. - First PAR delivered - Evacuate Areas 1, 2 & 3 - Contingency Message #11 delivered to EOF Director if first PAR does not meet these criteria. Contingency Message #12 delivered to Control Room SM, TSC SED and EOF Director allowing 100°F/hr cool down rate if this issue is now re-visited. Contingency Message #13 may now be delivered to an Auxiliary Operator sent to investigate S/G Safety Valve status.
- 1130 Main Steam Line Radiation Monitor RIA-2323 will rise substantially. Contingency Message #14 may be delivered to the EOF Dose Assessors at this time. The EOF Director will deliver a Follow-up PAR that will include Areas 4 and 5 of the EPZ.
- (1230) Plant cool down will continue until the drill terminates.