



FEMA

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U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

To Whom It May Concern:

Enclosed is one copy of the Final Report for the March 2, 2010 Radiological Emergency Preparedness (REP) Partial Participation Plume Exercise for the Palisades Nuclear Power Plant. Under separate cover, four copies of this report are being sent to the Michigan Department of State Police-Emergency Management & Homeland Security Division for distribution to the Counties of Allegan, Berrien and Van Buren, along with an additional copy for the State. The State of Michigan, the Counties of Allegan, Berrien and Van Buren and the operator, Entergy Corporation, participated in this exercise.

No Deficiencies were identified for any jurisdiction during this exercise.

There were no Areas Requiring Corrective Action (ARCA) identified for the State of Michigan during this exercise.

There was one prior ARCA for the State of Michigan identified during the August 19, 2008, Palisades Nuclear Power Plant REP Exercise, ARCA Number 44-08-5b1-A-1 Criterion 5.b.1 - Emergency Notification and Public Information, whereby two news releases were issued with incorrect and/or incomplete information. This ARCA was not successfully redemonstrated during this exercise.

There was one ARCA identified during this exercise for Berrien County. The ARCA identified for Berrien County was Number 44-10-6a1-A-02 under Criterion 6.a.1 - 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. This ARCA was successfully redemonstrated during the exercise.

There was one prior ARCA for Berrien County identified during the September 15, 2009, D.C. Cook Nuclear Power Plant exercise. ARCA Number 15-09-3.b.1-A-01 Criterion 3.b.1 - Potassium Iodine (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 general public) is maintained. This ARCA was successfully redemonstrated during the exercise.

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There were no ARCA identified for Van Buren County during this exercise.

There were no ARCA identified for Allegan County during this exercise.

There was one Plan Issue identified during the exercise for Allegan County. Plan Issue Number 44-10-6a1-P-03 - The Allegan County Procedures for Public Reception/Decontamination Centers, dated February 2010, assigns the responsibility for evacuee vehicle exterior decontamination to the fire services within the County. This is found in the SOP for Station #8, Vehicle Decontamination Station, pages 31-35. However, it is Allegan County's understanding that the State of Michigan, Department of Environmental Quality, is responsible for this function.


A detailed discussion of these issues can be found in Part IV of the Final Report.

Based on the results of the March 2, 2010, exercise, the offsite radiological emergency response plans and preparedness for the State of Michigan and affected local jurisdictions, site-specific to the Palisades Nuclear Power Plant can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency.

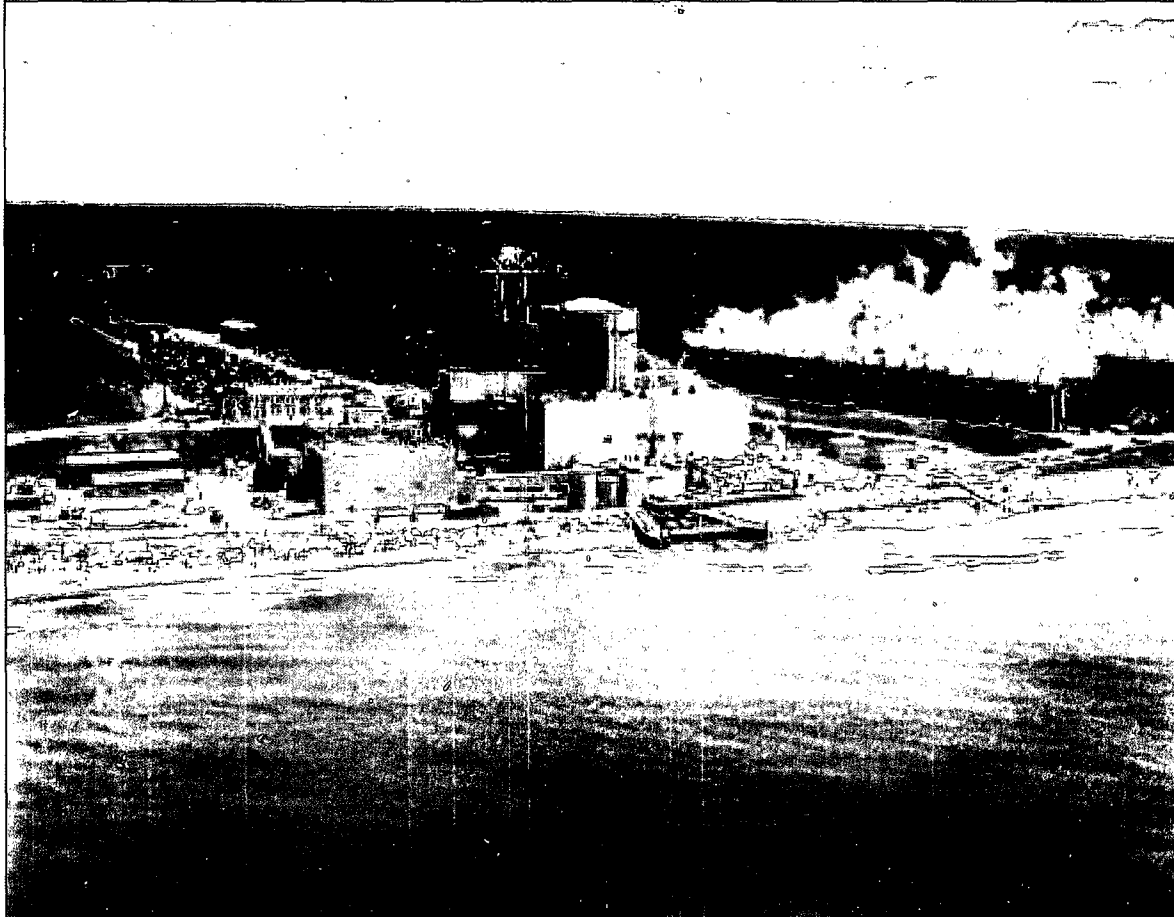
Therefore, the Title 44 CFR, Part 350, approval of the offsite radiological emergency response plans and preparedness for the State of Michigan site-specific to Palisades Nuclear Power Plant, granted on July 6, 1982, remain in effect.

If you have any questions, please contact William E. King, Chairman, Regional Assistance Committee, DHS/FEMA, Region V, at (312) 408-5575.

Sincerely,


Andrew Velasquez III
Regional Administrator

Enclosure (1)



Palisades Nuclear Power Plant

After Action Report/ Improvement Plan

Exercise Date - March 02, 2010

Radiological Emergency Preparedness (REP) Program



FEMA

Published June 11, 2010

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Palisades Nuclear Power Plant

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Palisades Nuclear Power Plant After Action Report/Improvement Plan

Published June 11, 2010

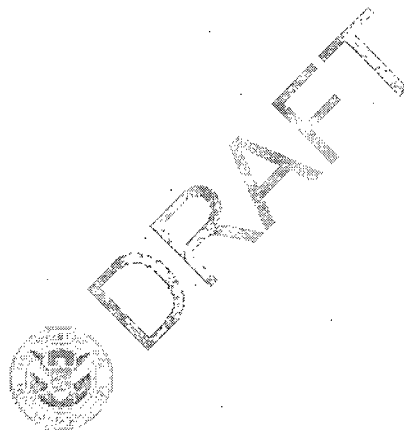
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EXECUTIVE SUMMARY

On March 2, 2010, a Radiological Emergency Preparedness (REP) Partial Participation Plume Exposure Pathway Exercise evaluation was conducted by the U.S. Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) for the 10-mile Emergency Planning Zone (EPZ) around the Palisades Nuclear Power Plant (PNPP). The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with 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 September 16, 2008. 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 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 were evident during this exercise.

This Final Report contains the evaluation of the biennial exercise and the evaluation of the following out-of-sequence interviews and activities:

- Protective Actions for Schools (EV-2) for the South Haven and Coloma School Districts
- Monitoring and Decontamination of Evacuees and emergency workers
- Monitoring and Decontamination of emergency worker's equipment
- Public Registration
- Congregate Care Center

Except where noted in this report, the State and local organizations demonstrated knowledge of and adequately implemented their emergency response plans and procedures.

No Deficiencies were identified for the State of Michigan or for Allegan, Berrien, and Van

Buren Counties during this exercise.

There was no Area Requiring Corrective Action (ARCA) identified for the State of Michigan during this exercise.

There was one prior ARCA for the State of Michigan identified during the August 19, 2008, Palisades Nuclear Power Plant REP Exercise, ARCA Number 44-08-5b1-A-1 Criterion 5.b.1 - Emergency Notification and Public Information, whereby two news releases were issued with incorrect and/or incomplete information. This ARCA was not successfully redemonstrated during this exercise.

There was one ARCA identified during this exercise for Berrien County. The ARCA identified for Berrien County was Number 44-10-6a1-A-02 under Criterion 6.a.1 - 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. This ARCA was successfully redemonstrated during the exercise.

One prior ARCA for Berrien County identified during the September 15, 2009, D.C. Cook Nuclear Power Plant exercise, Number 15-09-3.b.1-A-01 Criterion 3.b.1 - Potassium Iodine (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 general public) is maintained. This ARCA was successfully redemonstrated during the exercise.

There were no ARCA identified for Van Buren County during this exercise.

There were no ARCA identified for Allegan County during this exercise.

There was one Plan Issue identified during the exercise for Allegan County. Plan Issue Number 44-10-6a1-P-03 - The Allegan County Procedures for Public Reception /Decontamination Centers, dated February 2010, assigns the responsibility for evacuee vehicle exterior decontamination to the fire services within the County. This is found in the SOP for Station #8, Vehicle Decontamination Station, pages 31-35. However, it is Allegan County's understanding that the State of Michigan, Department of Environmental Quality, is responsible for this function.

INTRODUCTION - EXERCISE BASIS

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear planning and response. DHS/FEMA's activities are conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350 "Review and Approval of State and Local Radiological Emergency Plans and Preparedness", 351 "Radiological Emergency Planning and Preparedness" and 352 "Commercial Nuclear Power Plants: Emergency Preparedness Planning." 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 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 offsite 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, 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 FEMA Region V by the State of Michigan and involved local jurisdictions occurred on December 9, 1980. Formal approval of these RERPs was granted by FEMA on July 6, 1982, under 44 CFR 350.

A REP Partial Participation Plume Exposure Pathway Exercise was conducted on March 2, 2010, and evaluated by DHS/FEMA to assess the capabilities of State and local offsite 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 Offsite 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 DHS/FEMA Headquarters.

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; Notice" as published in the Federal Register Notice, Vol. 67, No. 80, dated April 25, 2002.

Section 1 of this report, entitled "Exercise Overview", presents information pertaining to the team that planned and coordinated the exercise. This section also provides listing of all participating jurisdictions and functional entities that were evaluated.

Section 2 of this report, entitled "Exercise Design Summary", contains the purpose and design of the exercise, a description of the plume pathway EPZ and presents basic information and data relevant to the exercise scenario.

Section 3 of this report, entitled "Analysis of Capabilities," 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 (if any) 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.

Section 4 of this report, entitled "Conclusion" presents the DHS/FEMA summary of overall exercise conduct and results as evaluated against the requirements of 44 CFR 350.

EMERGENCY PLANNING ZONE (EPZ) DESCRIPTION

The Palisades Nuclear Power Plant is a single unit pressurized water reactor with a net capacity of 805 megawatts. The facility owned and operated by Entergy Nuclear Operations, Incorporated, commenced commercial operation in December 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 permanent population is 33,027 persons.

The EPZ is comprised of five Protective Action Areas (PAAs), numbered 1 to 5, with PAAs 1, 2, and 3 being located within Van Buren County only; PAA 4 is located within both Allegan and Van Buren Counties; and PAA 5 is located within both Berrien and Van Buren Counties. The permanent population of PAA 1 is 2,001. The permanent population of PAA 2 is 1,939. The permanent population of PAA 3 is 2,360. The permanent population of PAA 4 is 10,283. The permanent population of PAA 5 is 4,308.

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.



SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Palisades Nuclear Power Plant

Type of Exercise

Plume

Exercise Date

March 02, 2010

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Palisades Nuclear Power Plant exercise:

State Jurisdictions

Michigan Department of Environmental Quality
Michigan Department of Health
Michigan Department of Transportation
Michigan Department of Environmental Quality
Michigan Emergency Management Homeland Security Division
Michigan Governor Representative
Michigan State Attorney General's Office
Michigan State Police
Michigan State Supreme Court

Risk Jurisdictions

Allegan County Emergency Management Agency
Allegan County Health Department
Allegan County Hotline Representative
Allegan County Public Information Officer
Allegan County RACES Personnel
Allegan County Radiological Defense (RADEF)
Allegan County Sheriff's Department (911 operators)
Allegan County Sheriff's Department
American Red Cross
American Red Cross, Kalamazoo Chapter
Area Agency on Aging
Bangor Community Fire Department

Berrien County Chief Executive
Berrien County Chief of Staff
Berrien County Emergency Management
Berrien County Health Department
Berrien County Hotline Representative
Berrien County Public Information Officer
Berrien County Public Safety Communications Dispatch Center
Berrien County Sheriff's Department
Berrien County Sheriff's Department Hazardous Materials Unit
Black River Amateur Radio Club
Coloma School District
Communications
Community Health Emergency Coordination Center
Decatur Fire Department
Decatur-Hamilton Fire Department
Department of Human Services (DHS)
Fennville Fire Department
Geographic Information System (GIS)
Graafshap Fire Department
North Berrien Fire Department
Gun Plain Fire Department
Otsego Fire Department
Paw Paw High School
Otsego Public Schools
Palisades Nuclear Power Plant Representative
Paw Paw Fire Department
Paw Paw Police Department
Plainwell Area Emergency Medical Services
Plainwell Department of Public Safety
RACES of Allegan County
Radio Amateur Civil Emergency Services (RACES)
Salvation Army
State Fire Marshall Representative
Van Buren American Red Cross

Van Buren County Hotline Representative
Van Buren Health Department
Van Buren Intermediate School District
Van Buren Sheriff's Office
WSJM Radio Station



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SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The DHS/FEMA Region V Office evaluated the PNPP Radiological Emergency Preparedness (REP) Partial Participation Plume Exposure Pathway Exercise conducted on March 2, 2010, to assess the capabilities of local emergency preparedness organizations in implementing their Radiological Emergency Response Plans (RERP) and procedures to protect the public health and safety during a radiological emergency involving the Palisades Nuclear Power Plant. The purpose of this report is to present the results and findings on the performance of the Offsite Response Organizations (OROs) during a simulated radiological emergency.

2.2 Exercise Objectives, Capabilities and Activities

Exercise objectives and identified Capabilities/REP Criteria selected to be demonstrated are discussed in Appendix E "Exercise Plan."

2.3 Scenario Summary

Appendix F "Scenario Details," contains a summary of the Exercise Scenario, a simulated sequence of events that was used as the basis for invoking emergency response actions by Offsite Response Organizations (OROs) in the Palisades Nuclear Power Plant REP Partial Participation Plume Exposure Pathway exercise on March 2, 2010.

This exercise scenario was submitted by the State of Michigan and Entergy Corporation and accepted by DHS/FEMA Region V on January 29, 2010.

During the exercise, in addition to information and data provided through the PNPP onsite scenario, controllers from the State of Michigan provided "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 additional specific response actions by OROs.

The details of the scenario are included in Appendix F "Scenario Details."

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 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 March 2, 2010, REP Partial Participation Plume Exposure Pathway Exercise conducted to test the offsite emergency response capabilities of State and local governments in the EPZ surrounding the PNPP.

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 agreements used in this exercise are found in Appendix E "Exercise Plan" of this report.

Presented below are definitions of the terms used in this report relative to the criteria demonstration status:

- M – Met: The status of a REP exercise Evaluation Area Criterion indicating that the participating Offsite Response Organization (ORO) demonstrated all demonstration criteria for the Evaluation Area Criterion to the level required in the extent-of-play agreement with no Deficiencies or ARCAs assessed in the current exercise and no unresolved prior ARCAs.
- D – Deficiency: 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.
- A – Area Requiring Corrective Action (ARCA) – An observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety. Listing of the demonstrated exercise criteria under which one or more ARCAs was/were assessed during the current exercise or ARCAs assessed during prior exercises remain unresolved. Included is a description of any ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.
- P – Plan Issue – An observed or identified inadequacy in the ORO's emergency plan or implementing procedures, rather than in the ORO's performance.
- N – Not Demonstrated – 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 and the corrective actions demonstrated, in this exercise.
- 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 exercise.

3.2 Summary Results of Exercise Evaluation

The matrix presented in Table 3.1, on the following pages, presents the status of all exercise criteria from Federal Register Notice: Vol. 67, No. 80, dated April 25, 2002, which were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. The criterion status box is blank if it was not scheduled for demonstration.

This subsection provides information on the evaluation of each participating jurisdiction and functional entity in a jurisdiction-based, issues-only format.

The DHS has developed a standardized system for numbering exercise issues. This system is used to achieve consistency in numbering exercise issues among DHS 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, ARCAs, and Plan Issues 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 (44 for Palisades Nuclear Power Plant).
- 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, P = Plan Issue).
- Exercise Identification Number – A separate two or three-digit indexing number assigned to each issue identified in the exercise.

Table 3.1 - Summary of Exercise Evaluation (5 pages)

DATE: 2010-03-02 SITE: Palisades Nuclear Power Plant, MI M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		State INP	State EOC	Joint Info Ctr	Rumor Control - With JIC	Tech Support Grp	Field Trm Ctr Cell	TACDB	MSP TACP	State Liaison - ACEOC	State Liaison - BCEOC	State Liaison - VCEOC
	Emergency Operations Management											
Mobilization	1a1	M	M	M		M	M					
Facilities	1b1											
Direction and Control	1c1		M	M								
Communications Equipment	1d1	M	M	M	M	M	M		M			
Equip & Supplies to support operations	1e1		M	M			M					
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1					M	M			M	M	M
Radiological Assessment and PARs	2b1					M	M			M	M	M
Decisions for the Plume Phase -PADs	2b2		M				M					
PADs for protection of special populations	2c1		M									
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1											
Rad Assess/Decision making concerning Relocation, Reentry, and Return	2e1											
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1											
Implementation of KI decision	3b1		M						M			
Implementation of protective actions for special populations - EOCs	3c1											
Implementation of protective actions for Schools	3c2											
Implementation of traffic and access control	3d1		M						M			
Impediments to evacuation are identified and resolved	3d2											
Implementation of ingestion pathway decisions - availability/use of info	3e1											
Materials for Ingestion Pathway PADs are available	3e2											
Implementation of relocation, re-entry, and return decisions	3f1											
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1											
Field Teams obtain sufficient information	4a2											
Field Teams Manage Sample Collection Appropriately	4a3											
Post plume phase field measurements and sampling	4b1											
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1									M	M	M
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3											
Emergency information and instructions for the public and the media	5b1			A	M					M	M	M
Support Operations/Facilities												
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1											
Mon / decon of emergency worker equipment	6b1											
Temporary care of evacuees	6c1											
Transportation and treatment of contaminated injured individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued, page 2/5)

		MDEQ	REP	EW	EQUIP/VEH	MON/DECON	-	DFD																																																			
		MDEQ	REP	EW	EQUIP/VEH	MON/DECON	-	NBFD														MDEQ	REP	-	EW	MON/DECON	-	DFD	MDEQ	REP	-	EVAC	MON/DECON	-	OHS	-	AC	MDEQ	REP	Evacuee	Vehicle	MON/DECON	PPHS	MDEQ	REP	Evacuee	MON/DECON/REG	CHS	MDEQ	REP	-	EVAC	MON/DECON	-	PPHS	-	VBC	MDEQ	REP
<p align="center">DATE: 2010-03-02 SITE: Palisades Nuclear Power Plant, MI M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated</p>																																																											
Emergency Operations Management																																																											
Mobilization	1a1																					M	M																																				
Facilities	1b1																																																										
Direction and Control	1c1																						M																																				
Communications Equipment	1d1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M																																				
Equip & Supplies to support operations	1e1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M																																				
Protective Action Decision Making																																																											
Emergency Worker Exposure Control	2a1																																																										
Radiological Assessment and PARs	2b1																																																										
Decisions for the Plume Phase -PADs	2b2																																																										
PADs for protection of special populations	2c1																						M																																				
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1																																																										
Rad Assess/Decision making concerning Relocation, Reentry, and Return	2e1																																																										
Protective Action Implementation																																																											
Implementation of emergency worker exposure control	3a1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M																																					
Implementation of KI decision	3b1																																																										
Implementation of protective actions for special populations - EOCs	3c1																						M																																				
Implementation of protective actions for Schools	3c2																						M																																				
Implementation of traffic and access control	3d1																						M																																				
Impediments to evacuation are identified and resolved	3d2																						M																																				
Implementation of ingestion pathway decisions - availability/use of info	3e1																																																										
Materials for Ingestion Pathway PADs are available	3e2																																																										
Implementation of relocation, re-entry, and return decisions	3f1																																																										
Field Measurement and Analysis																																																											
Adequate Equipment for Plume Phase Field Measurements	4a1																																																										
Field Teams obtain sufficient information	4a2																																																										
Field Teams Manage Sample Collection Appropriately	4a3																																																										
Post plume phase field measurements and sampling	4b1																																																										
Laboratory operations	4c1																																																										
Emergency Notification and Public Info																																																											
Activation of the prompt alert and notification system	5a1																						M																																				
Activation of the prompt alert and notification system - Fast Breaker	5a2																																																										
Activation of the prompt alert and notification system - Exception areas	5a3																																																										

Table 3.1 - Summary of Exercise Evaluation (Continued. page 3/5)

DATE: 2010-03-02 SITE: Palisades Nuclear Power Plant, MI M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated												
		VBC - TACDB	Van Buren County - TACP	Dosimetry - VBCHD	Van Buren County Personnel in JIC	EAS Radio Station WSJM	EV-2 South Haven PS	EVAC VEH MON/DECON/REG; Paw Paw HS	EW EQUIP/VEH MON/DECON - DFD	EVAC MON/DECON/REG; Paw Paw High School	Congregate Care; Lawrence HS	EW MON/DECON; Decatur Fire Department
Emergency Operations Management												
Mobilization	1a1				M							
Facilities	1b1											
Direction and Control	1c1											
Communications Equipment	1d1		M		M		M	M	M	M	M	M
Equip & Supplies to support operations	1e1		M		M		M	M	M	M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1											
Radiological Assessment and PARs	2b1											
Decisions for the Plume Phase -PADs	2b2											
PADs for protection of special populations	2c1											
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1											
Rad Assess/Decision making concerning Relocation, Reentry, and Return	2e1											
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1	M	M				M	M	M	M		M
Implementation of KI decision	3b1	M	M				M					
Implementation of protective actions for special populations - EOCs	3c1											
Implementation of protective actions for Schools	3c2						M					
Implementation of traffic and access control	3d1		M									
Impediments to evacuation are identified and resolved	3d2											
Implementation of ingestion pathway decisions - availability/use of info	3e1											
Materials for Ingestion Pathway PADs are available	3e2											
Implementation of relocation, re-entry, and return decisions	3f1											
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1											
Field Teams obtain sufficient information	4a2											
Field Teams Manage Sample Collection Appropriately	4a3											
Post plume phase field measurements and sampling	4b1											
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1					M						
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3											
Emergency information and instructions for the public and the media	5b1				M							

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After Action Report/Improvement Plan

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Support Operations/Facilities																			
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1												M		M				M
Mon / decon of emergency worker equipment	6b1													M					
Temporary care of evacuees	6c1																		M
Transportation and treatment of contaminated injured individuals	6d1																		


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Table 3.1 - Summary of Exercise Evaluation (Continued, page 4/5)

		Berrien County Initial Notification Point	Berrien County EOC	BC - TACDB	BCTACP	Berrien County Personnel in JIC	Congregate Care; CHS	EW EQUIP/VEH MON/DECON - NBFDF	EVAC VEH MON/DECON/REG; CHS	EVAC MON/DECON/REG; CHS	EW MON/DECON - NBFDF
<p align="center">DATE: 2010-03-02 SITE: Palisades Nuclear Power Plant, MI M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated</p>											
Emergency Operations Management											
Mobilization	1a1	M	M			M					
Facilities	1b1										
Direction and Control	1c1		M								
Communications Equipment	1d1	M	M		M	M	M	M	M	M	M
Equip & Supplies to support operations	1e1		M		M	M		M	M	M	M
Protective Action Decision Making											
Emergency Worker Exposure Control	2a1										
Radiological Assessment and PARs	2b1										
Decisions for the Plume Phase -PADs	2b2										
PADs for protection of special populations	2c1		M								
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1										
Rad Assess/Decision making concerning Relocation, Reentry, and Return	2e1										
Protective Action Implementation											
Implementation of emergency worker exposure control	3a1		M	M	M			M	M	M	M
Implementation of KI decision	3b1		M	M	M						
Implementation of protective actions for special populations - EOCs	3c1		M								
Implementation of protective actions for Schools	3c2		M								
Implementation of traffic and access control	3d1		M		M						
Impediments to evacuation are identified and resolved	3d2		M								
Implementation of ingestion pathway decisions - availability/use of info	3e1										
Materials for Ingestion Pathway PADs are available	3e2										
Implementation of relocation, re-entry, and return decisions	3f1										
Field Measurement and Analysis											
Adequate Equipment for Plume Phase Field Measurements	4a1										
Field Teams obtain sufficient information	4a2										
Field Teams Manage Sample Collection Appropriately	4a3										
Post plume phase field measurements and sampling	4b1										
Laboratory operations	4c1										
Emergency Notification and Public Info											
Activation of the prompt alert and notification system	5a1		M								
Activation of the prompt alert and notification system - Fast Breaker	5a2										
Activation of the prompt alert and notification system - Exception areas	5a3										
Emergency information and instructions for the public and the media	5b1		M			M					
Support Operations/Facilities											
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1								M	M	M

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Mon / decon of emergency worker equipment	6b1							M		
Temporary care of evacuees	6c1							M		
Transportation and treatment of contaminated injured individuals	6d1									


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Table 3.1 - Summary of Exercise Evaluation (Continued, page 5/5)

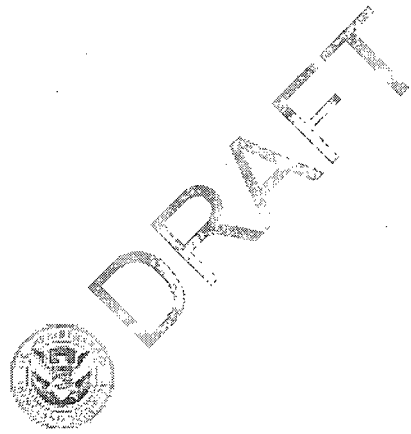
DATE: 2010-03-02 SITE: Palisades Nuclear Power Plant, MI M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated													
			EV-2 Coloma School District	Allegan County Initial Notification Point	Allegan County EOC	AC - TACDB	AC TACP	Allegan County Personnel in JIC	EW MON/DECON; Graafschap FD	Congregate Care; OHS	EVAC MON/DECON/REG; Otsego High School	EVAC VEH MON/DECON/REG; OHS	
Emergency Operations Management													
Mobilization	1a1		M	M				M					
Facilities	1b1												
Direction and Control	1c1			M									
Communications Equipment	1d1	M	M	M		M	M	M	M	M	M	M	M
Equip & Supplies to support operations	1e1	M		M		M	M	M			M	M	
Protective Action Decision Making													
Emergency Worker Exposure Control	2a1												
Radiological Assessment and PARs	2b1												
Decisions for the Plume Phase -PADs	2b2												
PADs for protection of special populations	2c1			M									
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1												
Rad Assess/Decision making concerning Relocation, Reentry, and Return	2e1												
Protective Action Implementation													
Implementation of emergency worker exposure control	3a1	M	M	M	M	M		M			M	M	M
Implementation of KI decision	3b1	M	M	M	M	M							
Implementation of protective actions for special populations - EOCs	3c1			M									
Implementation of protective actions for Schools	3c2	M	M										
Implementation of traffic and access control	3d1			M		M							
Impediments to evacuation are identified and resolved	3d2			M									
Implementation of ingestion pathway decisions - availability/use of info	3e1												
Materials for Ingestion Pathway PADs are available	3e2												
Implementation of relocation, re-entry, and return decisions	3f1												
Field Measurement and Analysis													
Adequate Equipment for Plume Phase Field Measurements	4a1												
Field Teams obtain sufficient information	4a2												
Field Teams Manage Sample Collection Appropriately	4a3												
Post plume phase field measurements and sampling	4b1												
Laboratory operations	4c1												
Emergency Notification and Public Info													
Activation of the prompt alert and notification system	5a1			M									
Activation of the prompt alert and notification system - Fast Breaker	5a2												
Activation of the prompt alert and notification system - Exception areas	5a3												
Emergency information and instructions for the public and the media	5b1			M			M						

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Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Palisades Nuclear Power Plant

Support Operations/Facilities													
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1								M		M	P	
Mon / decon of emergency worker equipment	6b1								M				
Temporary care of evacuees	6c1									M			
Transportation and treatment of contaminated injured individuals	6d1												



3.3 Criteria Evaluation Summaries

3.3.1 Michigan Jurisdictions

3.3.1.1 Initial Notification Point

- a. MET: 1.a.1, 1.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.2 State Emergency Operations Center

- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.b.2, 2.c.1, 3.b.1, 3.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.3 Joint Information Center

- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: 5.b.1.

ISSUE NO.: 44-08-5b1-A-1

ISSUE: Two News Releases were issued with incorrect and/or incomplete information. One contained the wrong emergency classification level. Both did not include all of the information that was contained in the Agricultural Advisories.

REASON UNRESOLVED: Two news releases did not recind agricultural advisory information when Protective Action Orders to evacuate were issued. Evacuation information contained in PAOs continued to advise shelering, if possible all livestock and to make sure that they have enough stored feed and well or stored water to last a few days.

3.3.1.4 Michigan State Rumor Control Center

- a. MET: 1.d.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.5 Technical Support Group

- a. MET: 1.a.1, 1.d.1, 2.a.1, 2.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.6 Field Team Center Cell

- a. MET: 1.a.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.7 MDEQ FTC Traffic and Access Control Dosimetry Briefing - Palisades

3.3.1.8 Michigan State Police Traffic and Access Control Point Demonstration - Palisades

- a. MET: 1.d.1, 3.b.1, 3.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.9 State Liaison - Allegan County EOC - Palisades

- a. MET: 2.a.1, 2.b.1, 5.a.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.10 State Liaison - Berrien County EOC - D.C. Cook and Palisades

- a. MET: 2.a.1, 2.b.1, 5.a.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.11 State Liaison - Van Buren County EOC - Palisades

- a. MET: 2.a.1, 2.b.1, 5.a.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None

- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.12 Michigan Department of Environmental Quality - Emergency Worker
Equipment/Vehicle Monitoring/Decontamination - Decatur FD**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.13 Michigan Department of Environmental Quality - Emergency Worker
Equipment/Vehicle Monitoring/Decontamination - North Berrien FD**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.14 Michigan Department of Environmental Quality - Emergency Worker
Monitoring/Decontamination - Decatur FD**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.15 Michigan Department of Environmental Quality - Evacuee
Monitoring/Decontamination - Otsego High School - Allegan County**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.16 Michigan Department of Environmental Quality - Evacuee/Vehicle
Monitoring/Decontamination - Paw Paw High School- Van Buren County**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.17 Michigan Department of Environmental Quality - Evacuee/Vehicle
Monitoring/Decontamination - Coloma High School- Berrien County**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.18 Michigan Department of Environmental Quality - Evacuee
Monitoring/Decontamination - Paw Paw High School - Van Buren County**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None

- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.19 Michigan Department of Environmental Quality - Emergency Worker
Monitoring/Decontamination - North Berrien Fire Department**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

**3.3.1.20 Michigan Department of Environmental Quality - Emergency Worker
Monitoring/Decontamination - Graafschap Fire Department**

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.21 EW Monitoring/Decontamination - Decatur Fire Department - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2 Risk Jurisdictions

3.3.2.1 Van Buren County Initial Notification Point - Palisades

- a. MET: 1.a.1, 1.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.2 Van Buren County EOC - Palisades

- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.c.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.a.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.3 Van Buren County Traffic and Access Control Dosimetry Briefing - Palisades

- a. MET: 3.a.1, 3.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.4 Van Buren County Traffic and Access Control Point Demonstration - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None

- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.5 Van Buren County Health Department - Dosimetry - Palisades

3.3.2.6 Van Buren County Public Information Officer in the JIC

- a. MET: 1.a.1, 1.d.1, 1.e.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.7 Emergency Alert System Radio Station WSJM - Palisades

- a. MET: 5.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.8 EV-2 Interview - South Haven Public Schools

- a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.2.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.9 Evacuee Vehicle Monitoring/Decontamination/Registration - Paw Paw High School - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.10 Emergency Worker Equipment/Vehicle Monitoring /Decontamination - Decatur Fire Department

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.11 Evacuee Monitoring/Decontamination/Registration - Paw Paw High School - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.12 Congregate Care - Lawrence High School - Palisades

- a. MET: 1.d.1, 1.e.1, 6.c.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None

- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.13 Berrien County Initial Notification Point

- a. MET: 1.a.1, 1.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.14 Berrien County Emergency Operations Center

- a. MET: 1.a.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, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: 3.b.1.

ISSUE NO.: 15-09-3b1-A-01

ISSUE: The decision to take KI was made by the State; however the implementation of that decision was not carried out by the Berrien County EOC in a timely manner.

CORRECTIVE ACTION DEMONSTRATED: The Berrien County EOC staff demonstrated the ability to implement timely recommendations and instructions to Emergency Workers as they relate to KI. At 1116 hours, following the declaration by PNPP, the State of Michigan Chief Medical Executive issued a PAO for all emergency workers in Protective Action Areas (PAAs) 1, 2, 3, 4 and 5 to ingest KI. This PAO was announced at the EOC at 1131 hours. This PAO was distributed (simulated) to EWs at 1133 hours through the emergency services radio system.

Through interview it was determined that emergency workers in PAAs 1, 2, 3, 4 and 5 would take their KI and log on their individual record sheet the time of ingestion

(simulated) and they would each report to their supervisors that they complied with the State of Michigan's Chief Medical Executive recommendation. The status of emergency worker ingestion of KI would be reported to the appropriate representative in the Berrien County EOC. The only PAA applicable to Berrien County is PAA #5 for the PNPP 10-Mile EPZ.

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.15 Berrien County Traffic and Access Control Point Dosimetry Briefing

- a. MET: 3.a.1, 3.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.16 Berrien County Traffic and Access Control Point Demonstration - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.17 Berrien County Public Information Officer at the JIC

- a. MET: 1.a.1, 1.d.1, 1.e.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.18 Congregate Care - Coloma High School - Palisades

- a. MET: 1.d.1, 6.c.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.19 Emergency Worker Equipment/Vehicle Monitoring /Decontamination - North Berrien Fire Department

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.20 Evacuee Vehicle Monitoring/Decontamination - Coloma High School - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.21 Evacuee Monitoring/Decontamination/Registration - Coloma High School - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: 6.a.1.

ISSUE NO.: 44-10-6a1-A-02

CRITERION: 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. (NUREG-0654, J.10.h., K.5.b)

CONDITION: A radiation technician performed an improper hand survey demonstration of a contaminated (simulated) evacuee at the out-of-sequence demonstration of evacuee monitoring and decontamination. The technician used a CD V-700 probe with a pancake probe and moved the probe too fast (8-10 inches per minute, estimated) and at a distance of several inches from the body.

POSSIBLE CAUSE: The technician did not properly apply the training that had been issued.

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

EFFECT: Evacuees with areas of contamination on their bodies could have been released from the facility and could have spread contamination to other individuals.

CORRECTIVE ACTION DEMONSTRATED: The demonstration was stopped and the individual was retrained and instructed by the Controller. A re-demonstration of the Radiation survey was performed and demonstrated successfully.

- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.22 Emergency Worker Monitoring/Decontamination - North Berrien Fire

Department

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None

- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.23 EV-2 Interview - Coloma Public Schools

- a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.2.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.24 Allegan County Initial Notification Point - Palisades

- a. MET: 1.a.1, 1.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.25 Allegan County Emergency Operations Center - Palisades

- a. MET: 1.a.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, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.26 Allegan County Traffic and Access Control Dosimetry Briefing - Palisades

- a. MET: 3.a.1, 3.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None

- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.27 Allegan County Traffic and Access Control Point Demonstration - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.28 Allegan County Public Information Officer at the JIC

- a. MET: 1.a.1, 1.d.1, 1.e.1, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.29 EW Monitoring/Decontamination - Graafschap Fire Dept. - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1, 6.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.30 Congregate Care - Otsego High School - Palisades

- a. MET: 1.d.1, 6.c.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.31 Evacuee Monitoring/Decontamination/Registration - Otsego High School - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1, 6.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.32 Evacuee Vehicle Monitoring/Decontamination - Otsego High School - Palisades

- a. MET: 1.d.1, 1.e.1, 3.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: 6.a.1.

ISSUE NO.: 44-10-6a1-P-03

CRITERION: 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. (NUREG-0654, J.10.h., K.5.b)

CONDITION: The Allegan County Procedures for Public Reception/Decontamination Centers, dated February 2010, assigns the responsibility for evacuee vehicle exterior decontamination to the fire services within the County. This is found in the SOP for Station #8, Vehicle Decontamination Station, pages 31-

35.

However, it is Allegan County's understanding that the State of Michigan, Department of Environmental Quality, is responsible for this function.

POSSIBLE CAUSE: Previous versions of Allegan County's SOPs for Public Reception/Decontamination Centers did not require Allegan County to decontaminate evacuees' vehicles. Either this change has not yet been incorporated into Allegan County planning, or the Allegan County's SOPs need to be modified to indicate that the State of Michigan is responsible for evacuee vehicle decontamination.

REFERENCE: NUREG 0654 Sec. J.12 (Requires setting standards for decontamination)

EFFECT: Vehicles belonging to the evacuating public that could have otherwise been washed and decontaminated at the Reception/Decontamination Center are now impounded in a contaminated parking area.

RECOMMENDATION: Allegan County prepare to implement Station #8 SOP of it's new procedure, or, State of Michigan implement Station #8 SOP in Allegan County.

- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

SECTION 4: CONCLUSION

Based on the results of the March 2, 2010, exercise, the offsite radiological emergency response plans and preparedness for the State of Michigan and affected local jurisdictions, site-specific to the Palisades Nuclear Power Plant, can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site. Therefore, the Title 44 CFR, Part 350, approval of the offsite radiological emergency response plans and preparedness for the State of Michigan site-specific to the Palisades Nuclear Power Plant, remain in effect.



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APPENDIX A: IMPROVEMENT PLAN

Issue Number: 44-10-6a1-P-03		Criterion: 6a1	
ISSUE: The Allegan County Procedures for Public Reception/Decontamination Centers, dated February 2010, assigns the responsibility for evacuee vehicle exterior decontamination to the fire services within the County. This is found in the SOP for Station #8, Vehicle Decontamination Station, pages 31-35.			
However, it is Allegan County's understanding that the State of Michigan, Department of Environmental Quality, is responsible for this function.			
RECOMMENDATION: Allegan County prepare to implement Station #8 SOP of it's new procedure, or; State of Michigan implement Station #8 SOP in Allegan County.			
CORRECTIVE ACTION DESCRIPTION:			
CAPABILITY:		PRIMARY RESPONSIBLE AGENCY:	
CAPABILITY ELEMENT:		START DATE:	
AGENCY POC:		COMPLETION DATE:	



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Issue Number: 44-08-5b1-A-1		Criterion: 5b1	
ISSUE: Two News Releases were issued with incorrect and/or incomplete information. One contained the wrong emergency classification level. Both did not include all of the information that was contained in the Agricultural Advisories.			
RECOMMENDATION: Ensure that all information contained in the news release is accurate prior release. Additionally, provide the media with copies of Executive Orders, Agricultural Advisories, and other pertinent documents upon receipt at the JIC to ensure that the media has complete and accurate information.			
SCHEDULE OF CORRECTIVE ACTIONS: The EMHSD will review JIC SOPs and conduct training with State JIC staff to address lack of attention to detail in proof reading the news releases prior to release to the media. The criterion will be demonstrated for correction at the 2009 D.C. Cook REP exercise.			
CORRECTIVE ACTION NOT DEMONSTRATED: At 1010 hours, the Michigan Department of Agriculture initiated Agricultural Advisories for Food Establishments and Facilities, Feed Operators and Facilities, and Fruit and Vegetable Growers and Distributors. These advisories were issued for Areas 1, 3 and 5 which were in conflict with the PAO to evacuate Areas 1 and 3 that was issued at 1018 hours. The advisories were faxed to the Berrien County EOC and the JIC at 1026 hours for dissemination to the public.			
RECOMMENDATION: Evaluate the individual simultaneous processes for initiating and disseminating protective actions to the public to determine how to minimize the chance for dissemination to the public of conflicting protective actions.			
CORRECTIVE ACTION DESCRIPTION:			
CAPABILITY:		PRIMARY RESPONSIBLE AGENCY:	
CAPABILITY ELEMENT:		START DATE:	
AGENCY POC:		COMPLETION DATE:	



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APPENDIX B: EXERCISE TIMELINE

Table 1, on the following page, presents the times at which key events and activities occurred during the Palisades Nuclear Power Plant REP Partial Participation Plume Exposure Pathway exercise conducted on March 2, 2010. Also included are times notifications were made to the participating jurisdictions/functional entities.



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Table 1 - Exercise Timeline
DATE: 2010-03-02, SITE: Palisades Nuclear Power Plant, MI

Emergency Classification Level or Event	Time Utility Declared	State EOC	Joint Info Ctr	VBC EOC	Berrien County EOC	Allegan County EOC
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0812	0825	N/A	0825	0825	0825
Site Area Emergency	0920	0926	0926	0928	0928	0928
General Emergency	1105	1103	1115	1115	1118	1118
Simulated Rad. Release Started	1103	1115	1125	1115	1116	1116
Simulated Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		0919	0940	0915	0937	0935
Declaration State of Emergency - State		0951	1015	N/A	N/A	N/A
Declaration of Local Disaster - County		N/A	N/A	0930	0935	0951
Exercise Terminated		1330	1350	1330	1330	1335
1st Precautionary Action Decision: School Evacuations		N/A	N/A	0932	1001	1036
2nd Precautionary Action Decision: MDOT Traffic Restrictions Protective Action Areas 1-3 Rail and Highway and 5-Mile Radius Water and Air		1125	N/A	N/A	N/A	N/A
1st Agricultural Advisory: All Dairy and Livestock Sheltered and Placed on Stored Feed and Well Water Protective Action Areas 1 and 5		0935	N/A	N/A	N/A	N/A
1st Agricultural Advisory Amendment: Added Protective Action Area 3 to the Attached Map		1031	N/A	N/A	N/A	N/A
2nd Agricultural Advisory: Agricultural Embargo Protective Action Areas 1-3		1125	N/A	N/A	N/A	N/A
3rd Agricultural Advisory: Agricultural Embargo Protective Action Areas 4 and 5		1130	N/A	N/A	N/A	N/A
4th Agricultural Advisory: Agricultural Embargo Protective Action Areas 1-5		1310	N/A	N/A	N/A	N/A
1st Protective Action Order: Evacuation of Protective Action Areas 1-3 and Lake 5-Mile Radius		1115	N/A	N/A	N/A	N/A
1st Siren Activation		N/A	N/A	1123	N/A	N/A
1st EAS Message		N/A	N/A	1131	N/A	N/A
2nd Protective Action Order: Evacuation of Protective Action Areas 1-5 and Lake 10-Mile Radius		1307	N/A	1315	N/A	N/A
2nd Siren Activation		N/A	N/A	1315	N/A	N/A
2nd EAS Message		N/A	N/A	1327	N/A	N/A
KI Administration Decision 1: Emergency Workers Located Protective Action Areas 1-5		1116	N/A	N/A	N/A	N/A
KI Administration Decision 2: Institutionalized Population and Caretakers Under 40 Protective Action Areas 1, 3, and 5		1120	N/A	N/A	N/A	N/A
KI Administration Decision 3: Institutionalized Population and Caretakers Under 40 Protective Action Areas 2 and 4		1125	N/A	N/A	N/A	N/A

APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel that evaluated the Palisades Nuclear Power Plant REP Partial Participation Plume Exposure Pathway Exercise on March 2, 2010. The list includes the evaluation team leadership and all evaluators. The organization each evaluator represents is indicated by the following abbreviations:

DHS/FEMA Dept of Homeland Security/Federal Emergency Management Agency

ICF Consulting

Title	Name	Organization
Radiological Assistance Committee, Chairman	William E. King	DHS/FEMA
Exercise Director	Stephen Tulley	DHS/FEMA
Senior Specialist	Gary Naskrent	DHS/FEMA
Site Specialist	Edward Diaz	DHS/FEMA
Team Leader - Michigan	James King	DHS/FEMA
Team Leader - Van Buren County	Bridget Ahlgrim	DHS/FEMA
Team Leader - Berrien County	Carolyn Sturghill	DHS/FEMA
Team Leader - Allegan County	Ed Golinski	DHS/FEMA

DATE: 2010-03-02, SITE: Palisades Nuclear Power Plant, MI

LOCATION	EVALUATOR	AGENCY
Initial Notification Point	Marcy Campbell	ICF
State Emergency Operations Center	Todd Gemskie Kimberly Wood	DHS/FEMA ICF
Joint Information Center	Robert Duggleby	ICF
Michigan State Rumor Control Center	Paul Nied	ICF
Technical Support Group	Marcy Campbell	ICF
Field Team Center Cell	Robert Walker	ICF
MDEQ FTC Traffic and Access Control Dosimetry Briefing - Palisades		
Michigan State Police Traffic and Access Control Point Demonstration - Palisades	Daniel Prevo	ICF
State Liaison - Allegan County EOC - Palisades	Louis Sosler	ICF
State Liaison - Berrien County EOC - D.C. Cook and Palisades	Richard Grundstrom	ICF
State Liaison - Van Buren County EOC - Palisades	Edward Diaz	DHS/FEMA
Michigan Department of Environmental Quality - Emergency Worker Equipment/Vehicle Monitoring/Decontamination - Decatur FD	Robert Walker	ICF
Michigan Department of Environmental Quality - Emergency Worker Equipment/Vehicle Monitoring/Decontamination - North Berrien FD	Lynn Steffensen	ICF
Michigan Department of Environmental Quality - Emergency Worker Monitoring/Decontamination - Decatur FD	Paul Ringheiser Jr	ICF
Michigan Department of Environmental Quality - Evacuee Monitoring/Decontamination - Otsego High School - Allegan County	Michael Meshenberg	ICF
Michigan Department of Environmental Quality - Evacuee/Vehicle Monitoring/Decontamination - Paw Paw High School - Van Buren County	Daniel Prevo	ICF
Michigan Department of Environmental Quality - Evacuee/Vehicle Monitoring/Decontamination - Coloma High School - Berrien County	Robert Duggleby	ICF
Michigan Department of Environmental Quality - Evacuee Monitoring/Decontamination - Paw Paw High School - Van Buren County	Todd Davidson	ICF
Michigan Department of Environmental Quality - Emergency Worker Monitoring/Decontamination - North Berrien Fire Department	Robert Duggleby	ICF
Michigan Department of Environmental Quality - Emergency Worker Monitoring/Decontamination - Graafschap Fire Department	DeeEll Fifield	ICF
EW Monitoring/Decontamination - Decatur Fire Department - Palisades	David Ortman	DHS/FEMA
Van Buren County Initial Notification Point - Palisades	Robert Vork	ICF
Van Buren County EOC - Palisades	Edward Diaz Paul Ringheiser Jr Robert Vork	DHS/FEMA ICF ICF
Van Buren County Traffic and Access Control Dosimetry Briefing - Palisades	Robert Vork	ICF
Van Buren County Traffic and Access Control Point Demonstration - Palisades	David Ortman	DHS/FEMA
Van Buren County Health Department - Dosimetry - Palisades		
Van Buren County Public Information Officer in the JIC	Paul Nied	ICF
Emergency Alert System Radio Station WSJM - Palisades	Lynn Steffensen	ICF
EV-2 Interview - South Haven Public Schools	Michael Meshenberg	ICF
Evacuee Vehicle Monitoring/Decontamination/Registration - Paw Paw High School - Palisades	Robert Vork	ICF

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Palisades Nuclear Power Plant

Emergency Worker Equipment/Vehicle Monitoring /Decontamination - Decatur Fire Department	Kimberly Wood	ICF
Evacuee Monitoring/Decontamination/Registration - Paw Paw High School - Palisades	Lynn Steffensen	ICF
Congregate Care - Lawrence High School - Palisades	DeeEll Fifield	ICF
Berrien County Initial Notification Point	Richard Grundstrom	ICF
Berrien County Emergency Operations Center	Clinton Crackel Delwyn Kinsley	DHS/FEMA DHS/FEMA
Berrien County Traffic and Access Control Point Dosimetry Briefing	Clinton Crackel	DHS/FEMA
Berrien County Traffic and Access Control Point Demonstration - Palisades	Wes Ryals	ICF
Berrien County Public Information Officer at the JIC	Paul Nied	ICF
Congregate Care - Coloma High School - Palisades	Thomas Gahan	ICF
Emergency Worker Equipment/Vehicle Monitoring /Decontamination - North Berrien Fire Department	Sonia Eischen	ICF
Evacuee Vehicle Monitoring/Decontamination - Coloma High School - Palisades	Louis Sosler	ICF
Evacuee Monitoring/Decontamination/Registration - Coloma High School - Palisades	Wes Ryals	ICF
Emergency Worker Monitoring/Decontamination - North Berrien Fire Department	Daniel Prevo	ICF
EV-2 Interview - Coloma Public Schools	Sonia Eischen	ICF
Allegan County Initial Notification Point - Palisades	Louis Sosler	ICF
Allegan County Emergency Operations Center - Palisades	Todd Davidson Thomas Gahan	ICF ICF
Allegan County Traffic and Access Control Dosimetry Briefing - Palisades	Louis Sosler	ICF
Allegan County Traffic and Access Control Point Demonstration - Palisades	DeeEll Fifield	ICF
Allegan County Public Information Officer at the JIC	Paul Nied	ICF
EW Monitoring/Decontamination - Graafschap Fire Dept. - Palisades	Bruce Swiren	ICF
Congregate Care - Otsego High School - Palisades	Karl Fippenger	ICF
Evacuee Monitoring/Decontamination/Registration - Otsego High School - Palisades	Karl Fippenger	ICF
Evacuee Vehicle Monitoring/Decontamination - Otsego High School - Palisades	Bruce Swiren	ICF
* Team Leader		

APPENDIX D: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ACCC	Allegan County Communications Center
ACEMD	Allegan County Emergency Management Director
ACP	Access Control Point
AFC	Adult Foster Care
ALARA	As Low As Reasonably Achievable
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Service
BCRC	Berrien County Road Commission
CCC	Congregate Care Center
CD	Central Dispatch
CDE	Committed Dose Equivalent
CEO	Chief Executive Officer
DFD	Decatur Fire Department
DO	Duty Officer
DPD	Domestic Preparedness Director
DRD	Direct- Reading Dosimeter
EAS	Emergency Alert System
EBS	Emergency Broadcast System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMC	Emergency Management Coordinator
EMD	Emergency Management Director
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPD	Electron Personal Dosimeter
EPZ	Emergency Planning Zone
EW	Emergency Workers
EWD	Emergency Worker Decontamination
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Teams

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After Action Report/Improvement Plan

Palisades Nuclear Power Plant

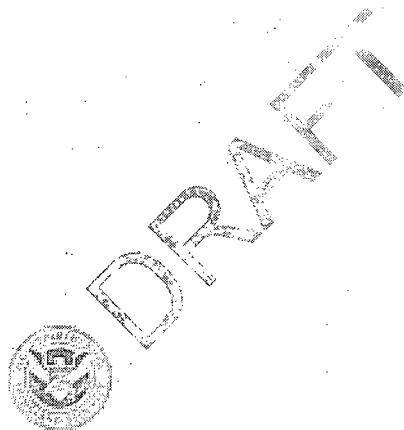
FRA	Federal Railroad Administration
FS	Fire Services
FTC	Field Team Center
FTCC	Field Team Center Coordinator
GE	General Emergency
GIS	Geographic Information Systems
GR	Governor's Representative
HD	Health Department
HF	High Frequency
HP	Health Physicist
HPL	Health Physics Liaison
HPS	Health Physics Support
HSAS	Homeland Security Advisory System
HSO	Health Services Officer
IM	Incident Manager
ISD	Intermediate School District
JIC	Joint Information Center
LE	Law Enforcement
LEIN	Law Enforcement Information Network
LIS	Land Information System
MARS	Military Affiliated Radio System
MSP	Michigan State Police
NPP	Nuclear Power Plant
ORO	Offsite Response Organization
PAG	Protective Action Guideline
PAO	Protective Action Order
PAR	Protective Action Recommendation
PIO	Public Information Officer
PM	Portal Monitor
PNPP	Palisades Nuclear Power Plant
PPFD	Paw Paw Fire Department
PW	Public Works
RACES	Radio Amateur Civil Emergency Services
RAP	Radiological Assistance Program
RC	Red Cross
REP	Radiological Emergency Preparedness
RESA	Regional Educational Service Agency
RO	Radiological Officer
SAE	Site Area Emergency
SHP	State Health Physicist

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SHPS	South Haven Public Schools
SLO	State Liaison Officer
SOP	Standard Operating Procedure
SS	School Services
SSC	Social Services Chief
TACP	Traffic Access Control Points
TEDE	Total Effective Dose Equivalent
TLD	Thermo Luminescent Dosimeter
UHF	Ultra High Frequency
VBCRDO	Van Buren County Radiological Defense Officer
VBISD	Van Buren Intermediate School District
VHF	Very High Frequency



APPENDIX E: EXERCISE PLAN

This appendix lists the exercise criteria, which were scheduled for demonstration in the Palisades Nuclear Power Plant Radiological Emergency Preparedness Partial Participation Plume Exposure Pathway Exercise on March 2, 2010, and the offsite extent-of-play agreement accepted by DHS/FEMA Region V on January 29, 2010. The exercise criteria, contained in the FEMA "Radiological Emergency Preparedness Exercise Evaluation Methodology; Notice," as published in the Federal Register Notice/Vol. 67, dated April 25, 2002, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev1, "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 offsite plans and procedures, an extent-of-play agreement is prepared by the State and accepted by DHS/FEMA to provide evaluators with guidance on expected actual demonstration of the criteria.

Exercise Criteria

Listed on the following pages are the specific radiological emergency preparedness criteria that were scheduled for demonstration during this exercise.



DRAFT

**STATE OF MICHIGAN, AND ALLEGAN, BERRIEN AND VAN BUREN COUNTIES
EXTENT OF PLAY AGREEMENT FOR THE
PALISADES NUCLEAR POWER PLANT REP EXERCISE
March 02, 2010**

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.
 - **State of Michigan**
 1. The State Emergency Operations Center (SEOC) will be fully activated. State personnel reporting to the SEOC will be mobilized in accordance with procedures.
 2. State personnel reporting to the county EOC's will be pre-positioned and will report when mobilized by the SEOC.
 3. State personnel reporting to the JIC will be pre-positioned and will begin participation after the arrival of county JIC personnel.
 4. State personnel involved in out of sequence demonstrations will be pre-positioned.
 - **Allegan County**
 1. The Allegan County EOC will be fully activated. Personnel will be mobilized in accordance with procedures.
 2. Allegan County personnel reporting to the JIC will be pre-positioned and will begin participation upon notification by the JIC Controller.
 3. All personnel involved in out of sequence demonstrations will be pre-positioned.
 - **Berrien County**
 1. The Berrien County EOC will be fully activated and mobilized in accordance with procedures.
 2. Berrien County JIC personnel will be pre-positioned and will begin participation upon notification by the JIC Controller.
 3. All personnel involved in out of sequence demonstrations will be pre-positioned.
 - **Van Buren County**
 1. The Van Buren County EOC will be fully activated. Personnel will be mobilized in accordance with procedures.
 2. Van Buren County JIC personnel will be pre-positioned and will begin participation upon notification by the JIC Controller.
 3. All personnel involved in out of sequence demonstrations will be pre-positioned.
- **Criterion 1.b.1:** Facilities are sufficient to support the emergency response.
 - **State of Michigan**

The State Emergency Operations Center (SEOC) is maintained in operational readiness and set up will not be demonstrated.

- **Allegan County**
Allegan County EOC is maintained in operational readiness.
- **Berrien County**
Berrien County EOC is maintained in operational readiness.
- **Van Buren County**
Van Buren County EOC will be set up prior to the start of the exercise.
- **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.
 - **State of Michigan, Allegan, Berrien & Van Buren Counties**
This criterion will be demonstrated at the SEOC, county EOC's and JIC.
- **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.
 - **State of Michigan, Allegan, Berrien & Van Buren Counties**
This criterion will be demonstrated by the SEOC, county EOC's, JIC and the Public Reception/Decon Centers, Emergency Worker Decon. Centers 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.
 - **State of Michigan, Allegan, Berrien & Van Buren Counties**
 1. Equipment, maps, displays, and other supplies will be demonstrated to support emergency operations at the SEOC, JIC, county EOC's and out of sequence events.
 2. Personnel involved in traffic and access control points will demonstrate knowledge of where to secure traffic control equipment.
 3. Potassium iodide and dosimetry are stored at each county's emergency management office and at the MSP/EMHSD office in Lansing. Van Buren County stores 25 bottles at the emergency management office and the remaining at the County Emergency Operations Center (EOC).
 4. The Michigan Department of Environmental Quality maintains supplies of potassium iodide and dosimetry for use by State personnel.
 5. Documentation related to KI shelf life extension is maintained by MSP/EMHSD and will be provided to FEMA at the Pre-Exercise Briefing along with instrument calibration data.

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.
 - **State of Michigan**
 1. The ability to make the decision to recommend the use of KI to emergency workers will be demonstrated by the SEOC.
 2. 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.

Note: This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Radiological Preparedness Coordinating Committee.

- **Allegan, Berrien & Van Buren Counties**

This criterion does not apply to the counties and will not be demonstrated by the 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.
 - **State of Michigan**
 1. The Technical Support Group in the SEOC will evaluate licensee and FTC cell provided information and complete an independent analysis of scenario data.
 2. Dose assessment evaluation will be conducted in the SEOC and/or FTC cell as appropriate.

Note: This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Radiological Preparedness Coordinating Committee.

- **Allegan, Berrien & Van Buren Counties**

This criterion does not apply to the counties and will not be demonstrated by the 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).

- **State of Michigan**

This criterion will be demonstrated by the Incident Management Group in the SEOC in conjunction with applicable support staff. i.e., Technical Support Group and MDCH.

Note: This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Radiological Preparedness Coordinating Committee.

- **Allegan, Berrien & Van Buren Counties**

This criterion does not apply to the counties and will not be demonstrated by the counties.

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

- **State of Michigan**

This criterion will be demonstrated by the Incident Management Group in the SEOC in conjunction with applicable support staff through the decision to recommend the use of KI to institutionalized persons.

- **Allegan, Berrien & Van Buren Counties**

1. Lists of transportation dependent and special needs populations are kept by each county. No personnel will be moved. No phone calls to transportation dependent persons will be made. Simulation of calls will be logged as such.
2. Equipment lists and rosters will be available in the county EOCs.

- **Berrien, Van Buren and Allegan Counties**

The School Services Representatives in the Berrien 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.

- **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.
 - **State of Michigan**
The State of Michigan will demonstrate this criterion at out of sequence activities utilizing State personnel.
 - **Allegan, Berrien & Van Buren Counties**
Allegan, Berrien and Van Buren Counties will demonstrate this criterion out of sequence at the reception center and decontamination centers. Berrien and Van Buren County will demonstrate this criterion at the access control point when emergency workers are issued dosimeters for use. Allegan County will demonstrate this criterion for the ACP via interview at the EOC.

Note: This criterion may be 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.
 - **State of Michigan**
The State will only demonstrate decision-making and directives to implement appropriate Protective Action Orders.
Note: Advanced distribution of KI to the general public has been instituted by Michigan Department of Community Health (MDCH). Orders for ingestion decision making will be implemented through the SEOC according to MDCH procedures.
 - **Allegan, Berrien & Van Buren Counties**
 1. This criterion will be demonstrated during the traffic and access control demonstrations for Allegan, Berrien and Van Buren Counties. Response personnel will demonstrate knowledge of when it is appropriate to take KI, but not actually ingest it.
 2. KI will be distributed to emergency workers in Allegan, Berrien and Van Buren Counties along with their dosimetry.
 3. **ARCA Issue 15-09-3b1-A-1**
The decision to take KI was made by the State; however the implementation of that decision was not carried out by the Berrien County EOC in a timely manner.

- **Criterion 3.c.1:** Protective action decisions are implemented for special population groups within areas subject to protective actions.
 - **State of Michigan**
This criterion will not be demonstrated by the state.
 - **Allegan, Berrien & Van Buren Counties**
 1. 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.
 2. Actual contacts to special population groups will not be made. Simulation of calls will be logged as such.
 3. Allegan, Berrien and Van Buren Counties will contact a maximum of four providers of transportation services, which may include public transit authorities, school systems for buses, ambulance services, or fire/rescue services. 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.
 - **State of Michigan**
This criterion will not be demonstrated by the state.
 - **Allegan Berrien & Van Buren Counties**
 1. This criterion will be demonstrated in Allegan, 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.
 2. 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.
 - **State of Michigan**
 1. This criterion will be demonstrated by the SEOC through the opening or closing of air, rail and water ways.
 2. Staffing of all access and traffic control points will be simulated.

- **Allegan, Berrien & Van Buren Counties**

1. Decisions related to traffic and access control will be demonstrated in Allegan, Berrien and Van Buren County EOCs. Allegan, Berrien and Van Buren County ACP demonstration locations will be determined during the exercise at a time agreed upon by the FEMA evaluator, the EMHSD Controller, and the county emergency management coordinator. Van Buren and Berrien Counties will dispatch one vehicle for the ACP evaluation. Allegan County will demonstrate this Criterion via interview with an Officer at the EOC.
2. Staffing of all other access and traffic control points will be simulated.

Note: 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.

- **State of Michigan**

This criterion will not be demonstrated by the state.

- **Allegan, Berrien & Van Buren Counties**

This will be demonstrated through discussions at the county EOCs. Messages will be injected by EMHSD Controllers to drive these demonstrations. Personnel will deal with the impediments by discussing the need for equipment, discussing its estimated time of arrival, etc. 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.

Note: 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 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 be 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.
 - **State of Michigan**
The State will provide information to each county for release in the Emergency Alert System messages.
 - **Van Buren County**
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. An interview with WSJM personnel will be conducted by FEMA following transmittal of EAS messages.
 - **Allegan & Berrien Counties**
Allegan and Berrien Counties will provide, as needed, information to Van Buren County for inclusion in EAS messages.

Note: This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Radiological Preparedness Coordinating 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. This criterion will not be demonstrated during this exercise.

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

- **State of Michigan, Allegan, Berrien & Van Buren Counties**
 1. This will be demonstrated at the JIC via dissemination of emergency information and instructions through joint media briefings and news release announcements in coordination with the SEOC and County EOCs. All media briefings will be conducted at the JIC.
 2. A public inquiry hotline will be operated by Entergy personnel based at the JIC during the exercise. Trending is performed by the Public Inquiry Coordinator, who identifies trends and ensures appropriate information is provided to the public inquiry operators and the JIC for inclusion in media briefings.
 3. **ARCA Issue 44-08-5b1-A-1**
Two news releases were issued with incorrect and / or incomplete information. One contained the wrong emergency classification level. Both did not include all of the information that was contained in the Agricultural Advisories.

Note: This criterion may be re-demonstrated as approved on a case-by-case basis by the Chair of the Radiological Preparedness Coordinating Committee.

EVALUATION AREA 6 - SUPPORT OPERATIONS/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.
 - **State of Michigan**
State HP personnel will provide assistance as requested during these demonstrations.
 - **Allegan County**
 1. Allegan County will fully demonstrate separate emergency worker and public reception/decontamination centers out-of sequence from the exercise.
 2. 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.
 - **Van Buren County**
 1. Van Buren County will fully demonstrate separate emergency worker and public reception/decontamination centers out-of sequence from the exercise.
 2. 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.

- **Berrien County**
 1. Berrien County will fully demonstrate separate emergency worker and public reception/decontamination centers out-of sequence from the exercise.
 2. 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.

Note: 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.
 - **State of Michigan**

State HP personnel will provide assistance as requested during these demonstrations at local EWD.
 - **Allegan, Berrien and Van Buren Counties**
 1. Allegan, Berrien and Van Buren Counties will each fully demonstrate an emergency worker/equipment decontamination center out of sequence with the exercise.
 2. Emergency vehicles will be monitored and decontaminated as appropriate.

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

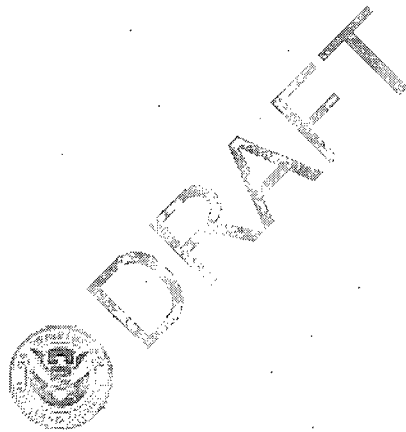
- **Criterion 6.c.1:** Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and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

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.

Note: 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.
 - **A date for this criterion demonstration will be determined**

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



APPENDIX F: SCENARIO DETAILS

This appendix contains a summary of the Exercise Scenario, a simulated sequence of events, that was used as the basis for invoking emergency response actions by Offsite Response Organizations (OROs) in the Palisades Nuclear Power Plant REP Partial Participation Plume Exposure Pathway exercise on March 2, 2010.

Results of a technical review of the scenario, submitted by the State of Michigan and Entergy Corporation on January 4, 2010, indicated that the scenario was adequate to support demonstration of Department of Homeland Security's requirements, as well as criteria selected by the Offsite Response Organizations provided in the State's January 4, 2010, extent-of-play submission.

This exercise scenario was accepted by DHS/FEMA Region V on December 23, 2009.

During the exercise, in addition to information and data provided through the PNNP onsite scenario, controllers from the State of Michigan gave "inject messages" containing scenario events and/or relevant data to those persons or locations who would normally receive notification of such events. The inject messages were the method used for invoking additional specific response actions by OROs.

DHS/FEMA concurred with the offsite scenario and extent-of-play submission for the State of Michigan, Allegan, Berrien, and Van Buren Counties for the March 2, 2010 Biennial Radiological Emergency Preparedness Exercise for the Palisades Nuclear Power Plant.

PALISADES ONSITE EXERCISE SCENARIO

The plant is operating at 100% power, equilibrium xenon, 736ppm boron, ASI on target and has been for the last 10 months. High Pressure Safety Injection P-66B is Out of Service (OOS) for pump oil change. Technical Specification (T.S.) LCO 3.5.2 has been in effect since 0600 with a return to Operations by 1200 on 3/02/2010 – same day. The plant is currently in Action Level 2 for PCS Activity due to suspected minor fuel failure(s).

A 150 gallon per minute (gpm) Primary Coolant System (PCS) leak will occur. The operating crew will enter ONP-23.1, "Primary Coolant Leak" to quantify leak rate and perform mitigating actions. The Operating Crew will trip the Reactor and enter EOP-1.0, "Standard Post-Trip Actions" followed by a transition to EOP-4.0, "Loss of Coolant Accident Recovery." An **ALERT** will be declared in the Fission Products Barriers Category (FA1) for potential loss (#2) of Primary Coolant barrier. When Safety Injection occurs Service Water P-7C motor/breaker will fail clearing and locking out 1-D bus. Emergency Diesel Generator (EDG) 1-2 will start, however, the output breaker for EDG 1-2 will not close (Auto or Manual) onto the 1D Bus due to bus overcurrent/lockout. This will result in HPSI P-66A loss of power and no operating HPSI pumps. As a result of loss of HPSI, the operating crew will transition to EOP-9.0 "Functional Recovery Procedure." The ERO will take actions to determine fault on 1-D bus (P-7C breaker) as well as refill HPSI P-66B pump oil reservoirs and restore it to service. The loss of 1-D bus results in minimal Containment Cooling (loss of 2 Service Water Pumps and loss of 3 Containment Air Coolers) during the Small Break LOCA resulting in a more observable Containment Barrier failure later.

Approximately 5 minutes after the Safety Injection, Primary Coolant Pump (PCP) P-50D (P-50B will fail if P-50D has already been secured @ 1300#) experiences a locked rotor and its breaker fails to open resulting in a loss of "Rear" Switchyard Bus. Pieces of the catastrophically failed P-50D impeller will migrate into the reactor core inducing fuel cladding failures that reveal themselves later in the event. Containment Radiation Monitors (RIA-1805 through RIA-1808) and Containment High Range Radiation Monitors (RIA-2321 and 2322) will begin to gradually rise soon after P-50D locked rotor event. The plant will be in a Natural Circulation (NC) condition.

Approximately 65 minutes after the Alert declaration and approximately 50 minutes after the P-50D locked rotor, the Containment High Range Radiation Monitors RIA-2321 and 2322 gradual rise will promptly jump to ~2500 R/hr. A **SITE AREA EMERGENCY (SAE)** will be declared in the Fission Products Barriers Category (FS1) for either potential loss (#2) or loss (#2) of Primary Coolant barrier and loss (#5) of fuel clad barrier.

Approximately 100 minutes after the SAE declaration the Containment Main Airlock will catastrophically fail as evidenced by Containment Pressure indications suddenly dropping to about atmospheric pressure. A **GENERAL EMERGENCY (GE)** will be declared in the Fission Products Barriers Category (loss of all 3 barriers) when the Containment Pressure drops and on-site and off-site dose teams report rising dose levels. Additionally, Component Cooling Water room and Turbine Building Area Monitors will begin to alarm. An **INITIAL PAR** will be made based upon the **Minimum PAR** for a General Emergency to **Evacuate Areas 1, 2 and 3.**

Approximately 2 hrs. after the declaration of the GE, the cladding fault will worsen into multiple fuel element failures sufficient to create a significant radiation level in the containment. Containment High Range Radiation Monitors rise to ~20,000 R/hr. This will cause an **UPGRADE PAR** to be developed for the entire EPZ based on Major-Core Damage with a release in progress (Areas 1, 2, 3, 4, and 5).

The exercise will be terminated upon satisfying all the objectives for the DRILL.

- ~0745 Crew reports to Simulator Control Room to begin turnover.
- ~0800 Crew assumes responsibility for the watch.
- ~0805 Crew conducts reactivity briefing (Provide crew with reactivity briefing sheets).
- ~0806 A 150 gpm PCS leak will occur – exceeds ALERT criteria for FA1. Crew will trip the reactor. All 3 Charging pumps will be in service with lowering Pressurizer level.
Containment Gas Radiation Monitor RIA-1817 and Containment Sump fillrate rise.
- ~0810 Crew completes verbal communication of reactor trip response actions. The crew transitions to EOP-4.0, "LOCA Recovery", secures 'A' and 'D' PCPs; commences Emergency Boration and PCS cooldown.

- NLT 0821 The Shift Manager will declare an ALERT for PCS leak > 50 gpm in the Fission Product Barrier category (FA1, potential loss PCS #2).
- ~0823 Safety Injection (SI) actuates on Low Pressurizer Pressure; loss of 1-E Bus and LCC-77; TSC and OSC lose power. Service Water P-7C trips immediately on start signal and locks out 1-D bus resulting in a loss of Safeguards Equipment powered from the 1-D Bus. This will result in HPSI P-66A loss of power and no operating HPSI pumps.
- ~0826 SM makes appropriate plant announcements and sounds Emergency Siren.
- ~0828 5 minutes after the Safety Injection Actuation Signal Primary Coolant Pump P-50D (or PCP P-50B if P-50D already secured) experiences a locked rotor and its breaker fails to open resulting in the loss of "Rear" Switchyard Bus (Station Transformer transferred to the Startup Transformer on the trip). The plant is in a Natural Circulation (NC) condition.
- ~0828 Containment radiation levels begin to rise to 20R/hr over an approximate one (1) hour period as indicated on RIA-2321 and RIA-2322. They will promptly jump to exceed 2000 R/hr at the end of that period.
- ~0833 Control Room transitions to EOP-9.0 "Functional Recovery Procedure" due to sustained loss of both HPSI pumps.
- ~0835 Control Room briefs and dispatches an Auxiliary Operator (AO) to the Switchyard to investigate "Rear" Bus failure.
- ~0840 Control Room will ask for Tech Support Center (TSC) assistance to restore HPSI P-66B as well as troubleshoot cause of 1-D bus lockout.
- ~0845 "E" Bus and LC77 are restored. Power is restored to the TSC and OSC.
- ~0858 Containment Isolation Signal actuates based on Containment High Radiation (2 out of 4 Containment Area Rad Monitors RIA-1805, 1806, 1807, 1808 ≥ 10 R/hr)
- ~0910 TSC/OSC announce they are operational.
- ~0910 AO dispatched to the Switchyard reports back conditions.
- ~0915 EOF announces that they are operational. EOF Director assumes Command and Control.
- ~0916 Containment High Range Radiation Monitors RIA-2321 and 2322 will promptly jump to ~2500 R/hr – exceeds SAE criteria for FS1.
- NLT 0931 Emergency Director (ED) or Site Emergency director (SED) declares a SITE AREA EMERGENCY (SAE) due to FS1, Loss of Fuel Cladding Barrier #5 (> 2000 R/hr) and Loss or Potential Loss of PCS Barrier #2 (PCS < 25F subcooled or PCS Leak Rate > 50 gpm).

- ~1056 The Containment Main Airlock catastrophically fails as evidenced by a noise heard in the Control Room (and by anyone in the vicinity, including the TSC) and Containment Pressure indications suddenly drop to about atmospheric pressure – exceeds GE criteria for FG1. (Message #6)
- NLT 1111 ED declares a General Emergency. Initial PAR will be to evacuate Areas 1, 2, and 3 with the wind from 285°. The EOF Director calls the State Emergency Management Director in Lansing.
- ~1258 Containment High Range Radiation Monitors RIA-2321 and 2322 will promptly jump to ~20,000 R/hr indicating > 20% core damage. Met conditions change causing dose estimates to exceed PAGs at 5 miles. This will cause an Upgrade PAR to be developed for the entire EPZ based on dose assessment indicating PAGs exceeded at 5 miles (Areas 1, 2, 3, 4, and 5). The PAG between 5 and 10 miles is exceeded for thyroid dose based on dose assessment.
- ~1313 EOF Director notifies the State Emergency Management Director of the Upgrade PAR.
- ~1330 Terminate/Critique



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DRAFT