



FEMA

SEP 20 2011

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

To Whom It May Concern:

Enclosed is one copy of the After Action Report/Improvement Plan for the June 1, 2011, out-of-sequence Radiological Emergency Preparedness (REP) demonstration for the Kewaunee Power Station. Under separate cover, four copies of this report are being sent to the State of Wisconsin for distribution to Kewaunee and Manitowoc Counties, along with an additional copy for the State. The State of Wisconsin, Kewaunee and Manitowoc Counties participated in this demonstration.

The Final Report was prepared by the staff of the U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) Region V, Radiological Emergency Preparedness Program.

No Deficiencies were identified for any jurisdiction during this demonstration.

There were no Areas Requiring Corrective Action (ARCAs) from previous exercises identified.

There was one ARCA identified for the State of Wisconsin. The ARCA identified for the State of Wisconsin was issued under Criterion 6.b.1. – Facility/Offsite Response Organization has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. Vehicle monitoring and decontamination staff misclassified vehicle contamination. This criterion was successfully re-demonstrated.

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

Based on the results of the June 1, 2011, exercise, the offsite radiological emergency response plans and preparedness for the State of Wisconsin and affected local jurisdictions, site-specific to the Kewaunee Power Station, 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.

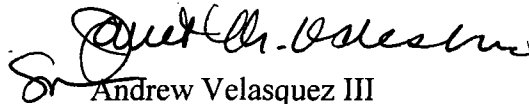
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Therefore, the Title 44 CFR, Part 350, approval of the offsite radiological emergency response plans and preparedness for the State of Wisconsin site-specific to the Kewaunee Power Station, granted on June 15, 1985, remains in effect.

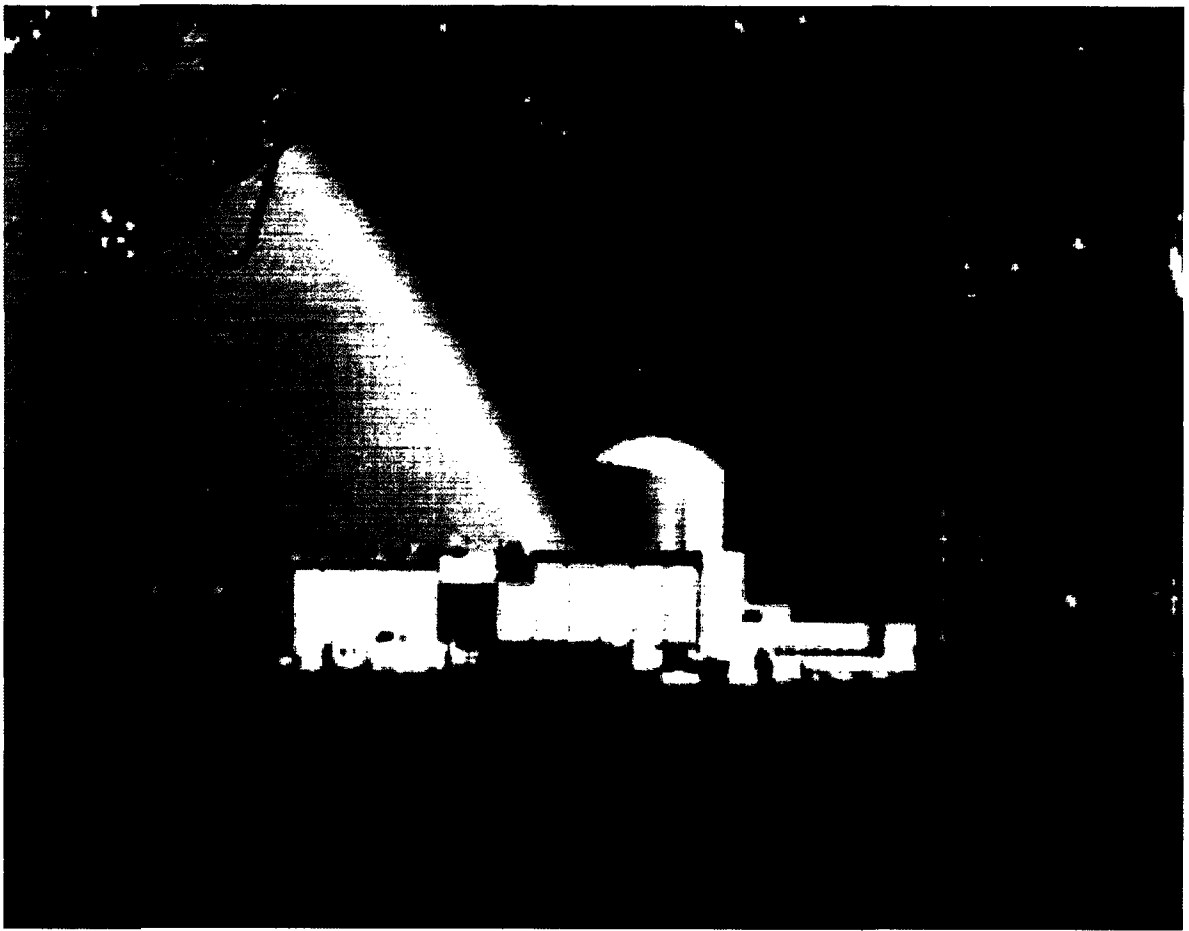
Copies of this Report were transmitted to the, Nuclear Regulatory Commission (NRC) Region III and the State of Wisconsin.

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)



Kewaunee Power Station

After Action Report/ Improvement Plan

Exercise Date - June 01, 2011

Radiological Emergency Preparedness (REP) Program



FEMA

Published September 07, 2011

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Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Kewaunee Power Station

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Kewaunee Power Station After Action Report/Improvement Plan

Published September 07, 2011

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EXECUTIVE SUMMARY

On June 1, 2011, the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA), Region V, evaluated four out-of-sequence demonstrations. The first demonstration was a Reception Center, second demonstration was a Congregate Care Center, third demonstration was the Manitowoc County Emergency Operations Center new facility certification, and the fourth a Medical Services (MS-1) Drill at the Luxemburg/Casco Intermediate School associated with the KPS. The purpose of the Reception Center, Congregate Care Center and MS-1 Drill was to assess the ability of offsite agencies to properly identify, monitor, decontaminate emergency workers and evacuees and also respond to a medical emergency involving a potentially radiologically contaminated member of the public. The Reception Center, Congregate Care Center and the MS-1 Drill were held in Kewaunee County. In accordance with DHS/FEMA policies and guidance concerning the exercise of State and local radiological RERPs and procedures. The Emergency Operations Center certification was conducted in Manitowoc County and was evaluated as a new facility.

DHS/FEMA would like to acknowledge the efforts of the many individuals who participated in the out-of-sequence demonstrations at both the new EOC located in Manitowoc County and the Luxemburg/Casco Intermediate School located in Kewaunee County.

Protecting the public health and safety is the full-time job of some of the demonstration 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 the out-of-sequence activities.

This After Action Report/ Improvement Plan (AAR/IP) contains the evaluation of the following out-of-sequence demonstrations:

- State of Wisconsin – Luxemburg/Casco Intermediate School - Emergency Worker Monitoring/ Decontamination of Equipment Including Vehicles
- State of Wisconsin – Luxemburg/Casco Intermediate School – Evacuee/Emergency Worker Monitoring and Decontamination.

-
- Kewaunee County – Luxemburg/Casco Intermediate School – Evacuee/Emergency Worker Registration
 - Kewaunee County – Luxemburg/Casco Intermediate School – Dosimetry Distribution Point
 - Kewaunee County – Luxemburg/Casco Intermediate School – Congregate Care Center
 - Kewaunee County – Luxemburg Ambulance Service – Medical Services-1 (MS-1) Transportation
 - Manitowoc County – Emergency Operations Center

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

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 Title 44 of the 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" (Commonly referred to as 44 CFR 350 through 352). These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

FEMA Regulation 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 KPS to FEMA Region V by the State of Wisconsin and involved local jurisdictions occurred on January 21, 1981. Formal approval of these RERPs was granted by FEMA on August 30, 1984, under 44 CFR 350.

The purpose of this AAR/IP is to present the exercise results and findings based on the performance of the Offsite Response Organizations (OROs) during a medical emergency involving a potentially radiologically contaminated member of the public.

The findings presented in this AAR/IP 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 DHS/FEMA evaluation process are contained in:

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;
- FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991; and
- FEMA "Radiological Emergency Preparedness: Exercise Evaluation Methodology; 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 demonstration. This section also provides a 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 demonstration and presents basic information and data relevant to the demonstration scenario.

Section 3 of this report, entitled "Analysis of Capabilities," presents detailed information on the demonstration of applicable demonstration 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 demonstration, recommended corrective actions, and the State and local governments' schedule of corrective actions, if applicable, for each identified demonstration issue; and (2) descriptions of unresolved ARCAs assessed during previous demonstrations and the status of the OROs' efforts to resolve them.

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

Four out-of-sequence demonstrations were conducted on June 1, 2011, 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 KPS. The purpose of this AAR/IP is to present the preliminary demonstration results and findings based on the performance of the OROs during a simulated radiological emergency.

The Final Report was prepared by the staff of the U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) Region V, Radiological Emergency Preparedness Program.

No Deficiencies were identified for any jurisdiction during this demonstration.

There were no Areas Requiring Corrective Action (ARCAs) from previous exercises identified.

There was one ARCA identified for the State of Wisconsin. The ARCA identified for the State of Wisconsin was issued under Criterion 6.b.1. – Facility/Offsite Response Organization has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. Vehicle monitoring and decontamination staff misclassified vehicle contamination. This criterion was successfully re-demonstrated.

Based on the results of the June 1, 2011, demonstration, the offsite radiological emergency response plans and preparedness for the State of Wisconsin and affected local jurisdictions, site-specific to the Kewaunee Power Station, 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.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Kewaunee Power Station

Type of Exercise

Plume

Exercise Date

June 01, 2011

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 Kewaunee Power Station exercise:

State Jurisdictions

- Wisconsin Department of Health Services
- Wisconsin Emergency Management

Risk Jurisdictions

- Kewaunee County Emergency Management
- Kewaunee County Radiological Officer
- Luxemburg Ambulance Service
- Luxemburg Fire Department
- Luxemburg Police Department
- Luxemburg Utility & Street Department
- Manitowoc County Emergency Management Director
- Manitowoc County Information Technology Specialist

Support Jurisdictions

- American Red Cross
- Boy Scouts of America Troop 1563 #25
- Brown County Hazardous Materials Team
- Brown County Health Department
- Casco Fire Department

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On June 1, 2011, the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA), Region V, evaluated four out-of-sequence demonstrations. The first demonstration was a Reception Center, second demonstration was a Congregate Care Center, third demonstration was the Manitowoc County Emergency Operations Center new facility certification, and the fourth a Medical Services (MS-1) Drill at the Luxemburg/Casco Intermediate School associated with the KPS. The purpose of the Reception Center, Congregate Care Center and MS-1 Drill was to assess the ability of offsite agencies to properly identify, monitor, decontaminate emergency workers and evacuees and also respond to a medical emergency involving a potentially radiologically contaminated member of the public. The Reception Center, Congregate Care Center and the MS-1 Drill were held in Kewaunee County. In accordance with DHS/FEMA policies and guidance concerning the exercise of State and local radiological RERPs and procedures. The Emergency Operations Center certification was conducted in Manitowoc County and was evaluated as a new facility.

2.2 Exercise Objectives, Capabilities and Activities

Demonstration objectives and identified Capabilities/REP Criteria selected are discussed in Appendix B "Exercise Plan." The Demonstration Planning Team (DPT) selected objectives that focus on evaluating emergency response procedures, identifying areas for improvement, and fostering collaboration between the various OROs and stakeholders. This demonstration focused on the following objectives:

- ORO demonstration of effective Emergency Operations Management.
- ORO demonstration of effective Protective Action Implementation.
- ORO demonstration of effective Support Operations and Facilities

2.3 Scenario Summary

Appendix D "Scenario Details," contains a summary of the demonstration scenario, a simulated sequence of events that was used as the basis for invoking emergency response actions by OROs in the KPS Reception/Congregate Care Center, MS-1 Drill.

During the demonstration, controllers from the State of Wisconsin 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. There was no scenario for the Manitowoc EOC due to the fact this was being evaluated as a new facility.

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 June 1, 2011, Kewaunee County Reception Center and Manitowoc County Emergency Operations Center Certification Drill to test offsite emergency response capabilities of State and local governments within the 10-mile EPZ surrounding the KPS.

Each jurisdiction and functional entity was evaluated based on its demonstration of criteria delineated in Federal Register Notice/vol. 67, no. 80, dated April 25, 2002. Detailed information on the demonstration criteria used in this demonstration are found in Section 3 of this report.

3.2 Summary Results of Exercise Evaluation

The matrix in Table 3.1, on the following page(s), presents the status of all demonstration criteria from the Federal Register Notice Volume 67, Number 80, dated April 25, 2002, which were scheduled for demonstration by all participating jurisdictions and functional entities.

Demonstration criteria are listed by number and the status of those criteria are indicated by the following letters:

M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)

D - Deficiency/(ies) assessed

A - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)

N - Not Demonstrated (Reason explained in Section 4.2)

Blank - Not scheduled for demonstration

Table 3.1 - Summary of Exercise Evaluation

<p align="center">DATE: 2011-06-01 SITE: Kewaunee Power Station, WI M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated</p>		WI - Lux/Casco Int - EWMDEqV	WI - Lux/Casco Int SD - Evac/Em Wkr M/D	KEW - Lux/Casco Int - Evac/EmerWkr Reg	KEW - Lux/Casco Int SD - DDP	KEW - Lux/Casco Int SD - CCC	KEW - Luxemburg Amb Srv - MS-1T	MAN - EOC
Emergency Operations Management								
Mobilization	1a1							
Facilities	1b1							M
Direction and Control	1c1	M						
Communications Equipment	1d1	M	M	M	M	M	M	
Equip & Supplies to support operations	1e1	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 Ingestion 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	
Implementation of KI decision	3b1	M			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							
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							
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							
Support Operations/Facilities								
Mon/Decon of evacuees and EWs and registration of evacuees	6a1		M	M				

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

3.3 Criteria Evaluation Summaries

3.3.1 Risk Jurisdictions

3.3.1.1 State of Wisconsin - Luxemburg/Casco Intermediate School - Emergency Worker Monitoring - Decontamination of Equipment Including Vehicles

As part of the KPS Radiological Emergency Preparedness Exercise, the State of Wisconsin successfully demonstrated the ability of key personnel with leadership roles to provide direction and control to that part of the response effort for which they were responsible.

Criterion 1.c.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, the State of Wisconsin successfully demonstrated the ability of key personnel with leadership roles to provide direction and control to that part of the response effort for which they were responsible during out-of-sequence activities for the Kewaunee Power Station (KPS) conducted from approximately 1838 hours, to 2150 hours, on June 1, 2011, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 North Main Street, Luxemburg, Wisconsin. Participants included: Representatives from Wisconsin Emergency Management, Wisconsin Department of Health Services Radiation Protection Section, Kewaunee County Emergency Management, Kewaunee County Sheriff's Department, Kewaunee County Community Service Officers (volunteers) Luxemburg and Casco Fire Departments, Luxemburg Emergency Medical Services, State Auxiliary Health Monitors, Luxemburg School District, Lakeland Disaster Chapter of the American Red Cross, and Troop 1563 #25 of the Boy Scouts of America (volunteers).

The Reception Center Manager (RCM) demonstrated effective control of activities throughout the demonstration. She directed the overall setup of the facility, coordinated security for the facility, ensured that staffing and equipment were adequate to support operations, worked with the State Health Team Leader (HTL) to ensure that adequate staff and equipment were available to support radiological activities, and coordinated with the HTL to scale down and terminate demonstration activities.

The RCM was supported by the Health Team Leader (HTL), who made all decisions regarding radiological issues, provided radiological guidance to emergency workers, reviewed and helped

coordinate setup of radiological monitoring and decontamination areas, ensured the emergency workers wore appropriate protective clothing and dosimetry, ensured that staff read their Direct-Reading Dosimeters (DRDs) and recorded results as prescribed in the plan, encouraged staff to freely ask questions, responded to abnormal radiological situations, and worked with Emergency Medical Technician's (EMTs) during the MS-1 demonstration. The HTL responded to an unusual event when a youth who was not part of scripted activities joined the Boy Scout volunteers during the evacuee monitoring demonstration. Participants handled the youth in the same manner as any other member of the public who might come their way, and the youth was eager to participate. The HTL determined that his participation would not interfere with the scripted activities and added an element of realism to the demonstration.

At approximately 1838 hours, the RCM initiated the demonstration by providing a pre-briefing to all the RC staff. She then gave clear directions to staff to sign-in, commence facility setup and activated the facility. During the pre-briefing, the RCM gave clear directions, assigned specific tasks, and explained how communications and documentation would be handled. Plans and procedures were made available to staff for reference (Reception Center Procedure, dated February, 2011). The various teams moved out to their respective work locations and readied them to receive evacuees and (as appropriate) emergency workers. Throughout the setup process, the RCM and HTL provided guidance to ensure that set-ups conformed to plans and procedures and that personnel and work stations were appropriately equipped and personnel were ready to receive evacuees, emergency workers and their vehicles for processing. When station workers raised questions regarding procedures and technical issues, the RCM and HTL, as appropriate, responded in a timely and effective manner to provide advice and information.

Under the direction and control of the RCM and HTL, the Kewaunee County Sheriff's department maintained security for the expansive reception center operations, including the Luxemburg Intermediate School Gymnasium where personnel monitoring, decontamination and registration activities were conducted, as well as outside for vehicle monitoring, decontamination, impounding, and EMS activities.

As the demonstration activities began to wind down, the RCM and HTL coordinated to ensure a smooth transition to termination, and following completion of the last operations, the demonstration was terminated at approximately 2055 hours. The RCM and HTL ensured that all records of the evening's events were collected and filed, that all equipment was stowed in accordance with the plan and the facility was restored to its pre-demonstration condition.

All activities described in the demonstration criterion were conducted in accordance with the plan, procedures and extent-of-play agreement.

Criterion 1.d.1:

Successfully demonstrated - This associated criterion requires no narrative.

Criterion 1.e.1:

Successfully demonstrated – This associated criterion requires no narrative.

Criterion 3.a.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, the State of Wisconsin successfully demonstrated the capability to issue appropriate dosimetry and procedures, manage radiological exposure to emergency workers in accordance with the plans and procedures and for emergency workers to periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. The demonstration was conducted by emergency workers responsible for the monitoring and decontaminating evacuee and emergency worker vehicles during out-of-sequence activities conducted for the Kewaunee Power Station (KPS) from approximately 1838 hours, to 2150 hours, on June 1, 2011, at the Kewaunee County Reception Center (RC), Luxemburg Intermediate School, 318 North Main Street, Luxemburg, Wisconsin.

Participants included personnel from the Wisconsin Department of Health Services Radiation Protection Section and the Luxemburg and Casco Fire Departments.

The Luxemburg Reception Center M/D personnel were issued standardized Dosimetry Kits provided by Kewaunee County Emergency Management. The M/D staff was briefed in groups of six individuals at the RC's Dosimetry Distribution Point located in the Luxemburg Intermediate School Gymnasium prior to assuming their monitoring and decontamination duties. Each kit contained one Arrow Tech Model 138 0-200 mR Direct-Reading Dosimeter (DRD), one Arrow Tech 0-20 R DRD, and one Landauer Thermo-Luminescent Dosimeter (TLD). They were also issued a Dosimeter Record Form for recording their initial, periodic and final DRD readings.

Through interview of five of the Vehicle M/D staff it was determined that they were aware that the maximum exposure limit set by the State was 3R during an emergency at the KPS. They

knew that at their location, any change in reading of 20 mR or more on their 0-200 mR DRD or any scale deflection on their 0-20 R DRD should be immediately reported to their supervisor. Further, they were aware that the DRDs were to be checked and the reading recorded at least every 30-minutes. During the demonstration, in addition to recording their initial readings upon issuance of their dosimetry, the M/D staff were notified three times by radio to read their DRDs and record the readings (at 1943, 2013 and 2047 hours, respectively). The M/D staff promptly read and recorded their readings in each instance.

The M/D staff wore their dosimetry in accordance with the verbal instructions given to them during a Radiological Safety Briefing provided by a Kewaunee County Public Health department Representative prior upon issuance of their dosimetry. The TLDs were worn attached to a breast pocket inside their protective turnout jacket, while the DRDs were worn attached to an outside breast pocket for ease of access when taking readings.

The serial numbers of the TLD and DRDs issued to each worker were recorded on each worker's Dosimetry Record Form. This form also recorded their name. In addition, Kewaunee County Community Service Officers systematically recorded the serial numbers of the dosimeters issued to each worker on a separate log form for long-term tracking.

The M/D workers were all aware that they were to contact the Health Team Leader regarding any questions about their dosimetry or the radiological monitoring/decontamination of vehicles. They also knew that at the end of their assignments they were to return their dosimetry and records to the Community Service Officers recorded the issuance of their dosimetry.

All activities described in the demonstration criterion were conducted in accordance with the plan, procedures and extent-of-play agreement.

Criterion 3.b.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, the State of Wisconsin demonstrated the availability of potassium iodide (KI) and appropriate instructions should a decision to recommend the use of KI be made and appropriate record keeping in support of KI administration for emergency workers was maintained. The demonstration was conducted by emergency workers responsible for the monitoring and decontaminating evacuee and emergency worker vehicles during out-of-sequence activities conducted for the Kewaunee Power Station (KPS) from approximately 1838 hours, to 2150

hours, on June 1, 2011, at the Kewaunee County Reception Center (RC), Luxemburg Intermediate School, 318 North Main Street, Luxemburg, Wisconsin.

Participants included personnel from the Wisconsin Department of Health Services Radiation Protection Section and the Luxemburg and Casco Fire Departments.

The RC personnel assigned to vehicle Monitoring / Decontamination (M/D) activities were issued KI following setup of the RC's work stations. The distribution of KI was conducted in conjunction with the distribution of dosimetry kits, which included the KI and instructions for its use, and a radiological safety briefing provided by through a Kewaunee County Public Health Department (PHD) Representative.

The M/D personnel were issued a simulated three-day supply of 130 mg tablets of iOSAT brand KI. The workers were instructed that additional KI would be made available is needed. The County's KI inventory is maintained at the Kewaunee County Emergency Operations Center (EOC). In accordance with the Extent-of-Play Agreement, the inventory records will be made available for inspection by FEMA at the full-scale exercise scheduled for October of 2011. All instruments used at drill were within required calibration frequencies. The expiration date of the KI is February of 2014.

The M/D personnel were also provided with a KI report form on which each individual would record the date and how much KI was ingested. Through interviews conducted with the M/D personnel, they demonstrated their knowledge of the proper use of KI: they knew they were responsible for completing the KI report form, who would authorize and direct them to take KI, possible side affects of KI use, who should not take KI, the taking of KI was voluntary and when and where completed KI forms and any excess KI would be returned. The KI report forms and any unused KI were returned to the PHD Representative at the end of the demonstration.

The State Health Team Leader noted that he would coordinate with the Kewaunee County PHD to assure appropriate notification of KI advisories through a supervisor to the M/D personnel and ensure that the personnel documented their KI ingestion times and dates on the appropriate form. The M/D personnel understood that they were not to ingest KI until instructed to do so by their Supervisor or the HTL.

All activities described in the demonstration criterion were conducted in accordance with the

plans, procedures and extent-of-play agreement.

Criterion 6.b.1:

As Part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, the State of Wisconsin demonstrated procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment, including vehicles. This was conducted as an out-of-sequence activity conducted from approximately 1838 hours, to 2150 hours, on June 1, 2011, located at the Kewaunee County Reception Center (RC), Luxemburg Intermediate School, 318 North Main Street, Luxemburg, Wisconsin.

Participants included personnel from the Wisconsin Department of Health Services Radiation Protection Section, Kewaunee County Community Service Officers (volunteers), the Luxemburg and Casco Fire Departments, and Evacuee Volunteer Representatives from the Boy Scouts of America, Troop 1563 #25.

The Luxemburg and Casco Fire Department personnel were responsible for monitoring and decontamination (M/D) of Evacuee and Emergency Worker vehicles and equipment. The Reception Center Manager (RCM) was responsible for coordinating the RC. The HTL was responsible for ensuring that all the necessary emergency equipment and resources were available and that the Luxemburg and Casco Fire Department personnel were aware of and followed the appropriate monitoring and decontamination procedures. Three M/D Teams were mobilized, two of which performed vehicle monitoring activities, and one of which performed vehicle decontamination activities, as needed.

During set-up operations, the M/D personnel established evacuee and emergency worker vehicle flow lanes using cones and barricade tape to direct vehicle entry to a Greeting Station, establish two Monitoring Stations and create lanes leading to the "Clean" Vehicle Parking Area, the Decontamination Station, and the Contaminated ("Dirty") Vehicle Parking Area. The set-up complied with the diagram on Page 16 of the Kewaunee County Reception Center Procedure.

Two Monitoring Teams (MTs), each consisting of two individuals, were assigned to the two Vehicle Monitoring Stations. An additional team was assigned to the Vehicle Decontamination Station. During set-up, the M/D staff donned their normal fire services turnout gear and latex gloves or Tyvek coveralls gloves and booties. Once set-up of the RC's physical facility was completed, M/D personnel were issued personal dosimetry and potassium iodide (KI) and given

a radiological safety briefing to protect them from excessive exposure to radioactive materials. Each of the M/D staff was issued appropriate personal dosimetry consisting of a permanent record Thermoluminescent Dosimeter (TLD), two Direct-Reading Dosimeters (DRDs), with ranges of 0-200 mR and 0-20 R, respectively, and a "Field Personnel Dosimeter Record" form. They were also issued faux KI (3 tablets) in accordance with the extent-of-play agreement. The "Field Personnel Dosimeter Record" form was also available to record KI ingestion (none was directed during the demonstration).

The M/D staff was interviewed by Kewaunee County Community Service Officers (volunteers), who recorded dosimeter serial numbers and personal identification information for tracking dosimeter use using the Kewaunee County "Radiation Dosimetry Equipment Inventory "Fire" form. Each of the staff then zeroed their respective DRDs using one of several available Dosimeter Corporation of America Model 909 Dosimeter Chargers. They read and recorded the initial reading on each dosimeter using their "Field Personnel Dosimeter Record" forms.

A Kewaunee Health Department Representative then gave the M/D personnel a briefing concerning the proper use of the dosimetry and KI issued to them. They were instructed to wear the TLD inside their turn-out jackets/Tyvek overalls and wear the two DRDs on the outside of their jackets/Tyvek overalls, between their waist and shoulders. They were instructed how and when to read their DRDs and that the initial reading upon being issued the DRDs should be between zero and no more than 10% of the dosimeter range. They were informed of their administrative reporting limits (any increase of 20 mR or more on their 0-200 mR DRD or any change on their 0-20 R DRD) and that in no case should they exceed 3 R without prior authorization from the HTL. They were also informed about the proper use of KI, including possible side-effects, who should not take KI, dosage, that they should take KI only when directed by their supervisor or the HTL, and that the taking of KI is voluntary. Finally, the M/D staff were advised to direct all questions regarding their dosimetry and KI to the HTL.

Following the briefing, the HTL checked to ensure that all of the M/D personnel were issued appropriate personal dosimetry and that they wore their personal dosimetry in accordance with instructions provided during their radiological briefing. The Evaluator interviewed five of the M/D staff and determined that they all had a basic knowledge of how to properly use their dosimetry and KI. They knew their exposure limits, how and when to read their DRDs and record readings, when to take (and not take) KI, who to contact for questions regarding their dosimetry and KI, and when and where to turn-in their dosimetry and unused KI.

The M/D personnel obtained their monitoring equipment from their Equipment Trailer. All monitoring equipment was supplied by Kewaunee County Emergency Management. The monitoring equipment included four hand held Ludlum Model 3 survey instruments, each equipped with a Model 44-9 Geiger Mueller (GM) pancake probe. The instruments were last calibrated on June 11, 2010. All the equipment was operationally checked in accordance with the manufacturer's recommendations. The equipment was readied by installing fresh batteries, checking all electrical contacts, performing a battery check using the test switch on each instrument, performing a source response check to ensure that each instrument was operating within range, and verifying that each instrument's calibration had not expired. They then covered the pancake probe with a thin clear plastic film, which was held in place by tape.

The M/D personnel obtained several background readings in the areas where vehicles would be surveyed. The readings obtained were all in the range 30-50 cpm (counts per minute) – with an average of 40 cpm – on the X0.1 scale. They then determined that the Decontamination Threshold was 140 cpm by adding 100 cpm to the average background reading, as required by their procedures. The Decontamination Team performed a similar process for determining the Decontamination Threshold in the Vehicle Decontamination Station. In this case, they found that the average background reading was 30 cpm and the Decontamination Threshold was therefore set at 130 cpm. However, they posted a placard in the Decontamination Station indicating that background was 60 cpm and the Decontamination Threshold was 160 cpm (see decontamination discussion below).

The HTL discussed how the M/D personnel would use cones and barrier tape to define and delineate the Greeting, Monitoring and Decontamination areas. The Emergency Worker vehicles and equipment were moved to the vehicle assembly area for monitoring and decontamination, as appropriate. A two-person survey team monitored each vehicle. Duties were split between monitoring the exterior and interior areas of vehicles. The M/D personnel paid particular attention to surveying the most likely areas to have contamination, including the radiator grill, wheel wells, door handles, floors and seats. They demonstrated good survey technique by consistently moving their survey probes at a speed of about one inch per second and distance of one-half to one-inch from the surface being surveyed.

Three vehicles were surveyed following the collection of vehicle and occupant identification information at the Greeting Station. The vehicles were surveyed in the manner prescribed in the

Kewaunee Reception Center Procedure. The M/D Teams began by dividing the effort between exterior and interior surveys. One team member was assigned to each aspect of the vehicles. The Exterior Monitor on each Monitoring Team began by surveying the front grill and bumper area of the vehicles, while the Interior Monitor began surveying the Driver-side exterior door handles and the interior floor and seat areas. The Exterior Monitor progressed to the front wheel wells, exterior door handles not already surveyed, roof rack (if any) the trunk/rear hatch handle and lid areas and rear bumper areas. The Interior Monitor moved from the driver area the left passenger area behind the driver, again surveying the floor and seat areas. He then moved to the opposite side of each vehicle and surveyed the passenger side floor and seat areas (front and back passenger areas). The HTL explained that the purpose of the surveys was to quickly determine whether any of the most likely areas on or in the vehicles was contaminated. Vehicles found to be below the Decontamination Threshold were cleared for transfer by a Monitoring Team member to the "Clean" Parking Area. According to the M/D personnel, vehicles would be decontaminated only if time and resources allowed. Otherwise, vehicles would be impounded until they could be processed. They also noted that if the exterior of the vehicle was determined to be contaminated the vehicle would either be driven to the Decontamination Station bay for cleaning or moved to the Contaminated Vehicle Parking Area for subsequent processing.

During monitoring of the second vehicle, the Emergency Medical Services (EMS) crew, which was stationed next to the vehicle monitoring stations, requested assistance to monitor a potentially contaminated and injured evacuee. A Monitor from one of the vehicle monitoring teams suspended on-going vehicle activities in order to monitor the victim. In doing so, his turnout coat came in contact with the victim. After completing survey of the victim, he then requested that his team mate in the vehicle monitoring area check him for any contamination he might have picked up from the victim. The Controller injected count rates of 50-60 cpm. The Monitor who checked his potentially contaminated team mate (correctly) declared that he was "clean" because the readings did not exceed the Decontamination Threshold. The results were reported to the HTL, who then directed them to return to their vehicle monitoring activities.

The third vehicle surveyed was selected by the Controller to demonstrate contamination detection and subsequent decontamination capabilities. When the Monitor surveyed the right front wheel well, the Controller injected a reading of 450 cpm. The Monitor continued to survey adjacent areas of the wheel well, apparently not recognizing the 450 cpm reading given to him by the Controller. The Controller injected near-background readings in the other areas of the wheel well. The monitoring procedure for wheel wells involved a double sweep, so that the same

areas were traced in reverse. When the Monitor returned to the area where the 450 cpm reading was previously injected, the Controller once again instructed the Monitor that he was getting a reading of 450 cpm on his survey instrument. The Controller repeated the 450 cpm reading. The Monitor continued on with his survey of the vehicle's exterior apparently not recognizing that the wheel well results exceeded the 140 cpm Decontamination Threshold, because he did not inform his team mate (who was monitoring the inside of the vehicle), nor did he notify the Heath Team Leader.

When the Exterior Monitor completed his survey of the vehicle, the Evaluator asked him what he found with regard to the contamination status of the vehicle and to describe what would be done with the vehicle. The Monitor stated that the vehicle was "clean" and would driven to the "Clean" Vehicle Parking Area, and the keys would be returned to the owner.

The Evaluator then stepped away with the Controller and discussed the Monitor's failure to recognize the contaminated status of the vehicle and take appropriate actions. The Controller concurred and requested that the Monitors be retrained and that they re-demonstrate their capabilities. The Controller conferred with the HTL, and they explained to the Monitors what should have occurred following the 450 cpm inject. During the retraining, the Exterior Monitor explained (correctly) that his survey meter was showing normal background readings – not the readings given by the Controller (which were simulated) – and concluded that the vehicle was not contaminated. The Controller explained to the Monitor that he should have responded to the readings given to him by immediately declaring the vehicle to be contaminated, marking the location of contamination, and notifying his co-workers, including the HTL. The worker signified that he understood.

The Exterior Monitor then re-demonstrated monitoring of the wheel well, and when the Controller injected a reading well in excess of the Decontamination Threshold the Monitor immediately declared that the vehicle to be contaminated, marked the contaminated location with an arrow using a soap bar, notified his team mate and the HTL, and contacted the Decontamination Team to alert them that they would be receiving a contaminated vehicle for processing.

At the Vehicle Decontamination Station, another crew washed the contaminated vehicle using a pressure sprayer and resurveyed the area marked by the Monitoring Team as having been contaminated. The monitoring technique demonstrated was exemplary. However, following the

initial decontamination attempt, the Monitor reported that the wheel well was still contaminated because he was getting survey meter readings of 40-50 cpm, which were in excess of the background readings (20-30 cpm) he had determined just prior to when the vehicle was driven to the Decontamination Station. The Monitor then directed his team mate to wash the wheel well a second time. The wheel well was pressure-washed once again and then re-monitored. The survey meter again read 40-50 cpm. The Monitor again classified the vehicle as contaminated. When asked by the Evaluator why he determined that the vehicle was contaminated, the Monitor stated it was because the survey results were in excess of the background levels (20-30 cpm) he had determined for the area. When asked what would be done with the vehicle at that point, the Monitor stated that it would be impounded in the parking area designated for "Dirty" vehicles.

The Evaluator then drew the Monitor's attention to the placard posted in the Decontamination Station bay, which listed background as 60 cpm and the Decontamination Threshold as 160 cpm. The Evaluator asked the Monitor why he did not use the information provided on the placard for assessing vehicle status. The Monitor replied: "those were the numbers given to him before the exercise started, and he elected to use the lower background reading of 30 cpm because that is what he had actually measured immediately prior to checking the vehicle for contamination."

At this point, the Evaluator stepped aside with the Controller to discuss the demonstration, and the Controller, recognizing the misclassification of the vehicle's contamination status and confusion regarding the Decontamination Threshold, requested to retrain the Monitor. The Controller explained the purpose of the background + 100 cpm basis for determining vehicle contamination status and what should be done with the placard when actual background differs from the posted background (i.e., notify the HTL and seek guidance). The Controller also explained that, although the readings that the Monitor obtained from the wheel well were slightly above background, they were well below either Decontamination Threshold, and the vehicle should have been classified as decontaminated after the first wash and sent to the "Clean" Vehicle Parking Area.

In summary, the status of DHS/FEMA criteria for this location is as follows:

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

ISSUE NO.: 33-11-6b1-A-01

CRITERION: Facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. (NUREG-0654, K.5.b)

CONDITION: Vehicle monitoring and decontamination staff misclassified vehicle contamination status at both the monitoring and decontamination locations. At the Vehicle Monitoring Station, a vehicle that was contaminated in excess of the Decontamination Threshold was misclassified as "clean" and was directed to the "clean" vehicle parking area. At the Vehicle Decontamination Station, the Decontamination Team directed a vehicle that they determined to be below their decontamination threshold to the parking area for "dirty" vehicles (i.e., the vehicle had been successfully decontaminated but was incorrectly classified and impounded).

Vehicle Monitoring Station

The team member who monitored the exterior of a vehicle at the Vehicle Monitoring Station took no action to classify the vehicle as contaminated when the Controller injected a reading of 450 cpm for the right front wheel well. The injected contamination levels were well above the 140 cpm Decontamination Threshold (background + 100 cpm) determined by the crew for the Vehicle Monitoring Station location. When asked by the Evaluator where the vehicle would be taken after monitoring, the Monitor replied "to the clean parking area." He did not recognize that the vehicle was contaminated, he did not inform his coworker (who was monitoring the inside of the vehicle), nor did he notify the Heath Team Leader (HTL).

Vehicle Decontamination Station

At the Vehicle Decontamination Station, the crew reported that the area on the vehicle marked as contaminated by the Vehicle Monitoring Station Team was still contaminated following the initial washing, because his survey meter indicated actual readings of 40-50 cpm, which were in excess of the average background reading (30 cpm) that the crew had obtained at the beginning of the demonstration. When asked by the Evaluator why the vehicle was determined to be contaminated, the Monitor replied it was because the survey results were in excess of the actual background levels determined for the area. When asked by the Evaluator what the Decontamination Team would do with the vehicle, they stated that they would

attempt to decontaminate the affected area on the vehicle one more time, then remonitor the vehicle, and, if it continued to give survey readings in excess of background (30 cpm), they would impound the vehicle in the parking area designated for "dirty" vehicles."

The Evaluator then drew the Monitor's attention to the placard that the Decontamination Team had posted on the wall of the Decontamination Station, which listed background as 60 cpm and the Decontamination Threshold as 160 cpm (background + 100 cpm). The Evaluator asked the Decontamination Team Monitor why he did not use the information provided on the placard for assessing vehicle status. The Monitor responded that the placard numbers were given to him before the exercise started, but his survey results prior to the demonstration showed that the average background was 30 cpm. Consequently, he elected to use the lower average background reading of 30 cpm because that is what he had actually measured immediately prior to checking the vehicle for contamination. The Monitor did not correctly use either the scenario Decontamination Threshold or the actual threshold that the team had determined to properly assess the contamination status of the vehicle.

POSSIBLE CAUSE: Vehicle Monitoring and Decontamination Teams did not know how to correctly use Decontamination Thresholds to classify vehicle contamination status. In addition, the Vehicle Decontamination Team did not understand that Controller-injected information supersedes actual instrument readings.

REFERENCE: NUREG 0654 K.5.b; Wisconsin Department of Health Services Radiological Incident Response Plan, Version 2.2, Vol. 4, dated January 30, 2011 (see especially Section 4.2.2).

EFFECT: The contamination status of vehicles was misclassified by both the Vehicle Monitoring and Vehicle Decontamination Teams. This resulted in a contaminated vehicle being misclassified as "clean" at the Monitoring Station, even though it was contaminated well in excess of the 140 cpm Decontamination Threshold (actual background + 100 cpm) determined by the team for the Monitoring Station location. The Vehicle Monitoring Team released the contaminated vehicle to the "Clean" parking area, where it could have spread contamination, and they returned of the

vehicle's keys to the owner, who could have taken it anywhere, further spreading contamination to themselves and other areas.

At the Decontamination Station, the misclassification resulted in a vehicle that the Decontamination Team had successfully decontaminated below their 130 cpm Decontamination Threshold (background + 100 cpm) being impounded in the "Dirty" Vehicle Parking Area. This action could have resulted in an attempt to decontaminate an otherwise "clean" vehicle.

CORRECTIVE ACTION DEMONSTRATED: The Evaluator discussed the Decontamination Threshold errors with the Controller. The Controller requested to retrain the monitoring personnel at each location and have each Monitor re-demonstrate capabilities.

Following retraining, the Vehicle Monitoring Station Team redemonstrated monitoring a vehicle and correctly determined its contaminated status when the Controller injected readings (400-500 cpm), which was well in excess of the Monitoring Station Decontamination Threshold (140 cpm). The Monitor immediately notified his team mate and determined that the vehicle would be directed to the Vehicle Decontamination station and they would notify the HTL via their hand-held radio in accordance with their procedures.

The Controller retrained the Decontamination Station Team by explaining the purpose of the Background + 100 cpm basis for determining vehicle contamination status and what should be done with the placard even if actual background differs from the posted background (notify the HTL and seek guidance). The Controller also explained that, although the wheel well readings obtained by the Monitor (40-50 cpm) were only slightly above actual background (30 cpm) and well below the Decontamination Threshold (130 cpm) used by the Decontamination Team for the demonstration, the vehicle should have been classified as successfully decontaminated after the first decontamination attempt and sent to the "Clean" Vehicle Parking Area.

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 of Wisconsin - Luxemburg/Casco Intermediate School - Evacuee/Emergency Worker Monitoring and Decontamination

As part of the KPS Radiological Emergency Preparedness Exercise on June 1, 2011 the State of Wisconsin demonstrated the capability to provide direction and control for evacuee monitoring and decontamination in accordance with plans and procedures.

Criterion 1.d.1:

Successfully demonstrated – This associated criterion requires no narrative.

Criterion 1.e.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, the State of Wisconsin demonstrated the capability to provide sufficient equipment, displays, dosimetry, potassium iodide (KI) and other supplies support of emergency operations during an out-of-sequence reception center demonstration from approximately 1838 hours, to 2150 hours, on June 1, 2011. The demonstration was conducted at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

The Casco Fire Department provided firefighters who unloaded labeled footlockers, plus miscellaneous boxes, containing supplies and equipment needed to conduct evacuee and emergency worker monitoring and decontamination in the gymnasium at Luxemburg Intermediate School. Monitoring equipment consisted of two Thermo Scientific TPM-903 portal monitor (both were calibrated on 6/17/2010), twelve Ludlum-3 survey meters, and three Ludlum-12 survey meters (all were calibrated on 6/16/2010), with GM probes covered in thin plastic. The monitoring equipment was calibrated and exchanged annually by the State of Wisconsin.

Other supplies included latex gloves, tyvek suits, disposable shoe covers, radiation area barricade tape, trash bags, radiation signs, zip lock bags, step-off pads, masking tape, rolls of kraft paper,

cleaning supplies, office supplies, Kewaunee County Reception Center Procedures, floor plans, maps, and various record forms. Traffic control cones were also provided by the Casco Fire Department.

Bath items such as soap, shampoo, cotton shower towels, paper hand towels, and disposable coveralls and booties, were provided for evacuees requiring decontamination in the men's or women's locker room showers. Large plastic bags were identified for safe storage of contaminated clothing. Zip-lock bags with property receipt forms were available for personal items.

Stanchions, barricade tape, and directional signs and floor arrows were arranged to control the flow of evacuees into and out of the monitoring area and were used to direct evacuees to and from the locker rooms. The stanchions and tape also provided a clear separation between contaminated and uncontaminated areas. Kraft paper was used on the floor to help control cross contamination.

Per the extent-of-play the State is not responsible for equipment, dosimeter calibration records, and stockpiled KI at the Reception Center. Instrument inventory, calibration records, and stockpiled KI quantities will be available for review in the EOC during the

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

Criterion 3.a.1:

Successfully demonstrated – This associated criterion requires no narrative.

Criterion 6.a.1:

As Part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise the State of Wisconsin successfully demonstrated that the Luxemburg Intermediate School has appropriate space, adequate resources, and trained personnel to provide monitoring and decontamination for evacuees and emergency workers during an out-of-sequence reception center demonstration from approximately 1838 hours, to 2150 hours, on June 1, 2011. The demonstration was conducted at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

The Luxemburg Intermediate School facility provided adequate space and furnishings for evacuee and emergency worker monitoring and decontamination. Casco Fire Department (CFD) provided the resources and trained personnel to complete the assigned functions. The CFD team brings the equipment needed for evacuee and emergency worker monitoring and decontamination to the school from off-site storage (some on-site storage of supplies is also maintained current). The equipment used to monitor evacuees and emergency workers include 2 portal monitors and 12 hand-held radiation detectors with pancake probes. In the locker room, a shower facility and wash basin for removal of contamination was utilized. Taped arrows on the floor to provide a path leading to the portal monitor and then either to the shower facility (if determined to be contaminated) or (if clean) to the CFD area for final registering of personnel monitoring results.

While the facility was being set-up, separate groups were assigned to perform operational checks of the portal monitors and radiation detectors. Each radiation detector was removed from a storage box and operation was checked in accordance with the instructions provided with the instruments: including insertion of batteries, removal of protective cover from the pancake probe and checking the instrument response to the attached Cs-137 source. All detectors/sources were within specification limits and current calibration (June 16, 2010 to June 16, 2011). The group was questioned on what actions would be taken if the instruments did not respond as specified and they answered that the instrument would be replaced.

Evacuee Monitoring - Operation of the 2 Bicron Model TPM 903 portal monitor were within calibration (June 17, 2010 to June 17, 2011) and were checked out in accordance with the manufacturer's instructions. The monitor was plugged into a 120 volt power source and activated. The background level was stable, within acceptable limits, and marked on a record sheet.

Operation of the portal monitor was checked by having an emergency worker pass through the monitor three times with a 1 micro-curie, Cs-137 source located at shoulder height, waist height and below knee level. The monitor alarmed appropriately each time.

According to the extent-of-play, six individuals were simulated to be evacuees from a local Boy Scout Troop located in Kewaunee County and were to be monitored for radiation. Upon entering the facility, each evacuee followed the sticker arrows on the floor that formed a path leading down the line to the portal monitors (at the middle of the gymnasium).

The first five evacuees who walked through a portal monitor did so without activating its alarm. Those individuals were escorted as they continued down the 'clean' path and given a green sticker was placed on each evacuee that successfully processed through the monitors indicating that they were contamination free. The sixth evacuee set off the alarm twice and was escorted down the 'contaminated' path into the decontamination area. He was then directed to the shower room for decontamination. After being decontaminated (simulated), he was monitored a second time using a hand-held survey instrument and was found to be free from contamination. An "Individual Survey and Decontamination Record" was completed by CFD staff, and the evacuee was directed to the American Red Cross Registration Station. The monitoring techniques used were slow and deliberate, with proper positioning of the probe for personnel monitoring.

The six individuals were monitored for contamination in 64 seconds (or an average of 10.7 seconds each which is within the required monitoring of 3 evacuees per minute. The total population of the Kewaunee Power Station 10-mile EPZ is approximately 8,400 people (based on the Kewaunee County EOP). The evacuation population that would be expected at the Luxemburg Reception Center is approximately 1,680 individuals based on 20% total EPZ population arriving at the RC. The RC had two portal monitors, which can monitor 240 persons each (480 persons, total) per hour. The maximum population that could be monitored via the portal monitors in a 12-hour period is 2,880 individuals.

A Luxemburg firefighter was designated by the extent-of-play to be a contaminated emergency worker. The firefighter was brought directly to the decontamination area and not run through the portal monitors. The firefighter was properly surveyed and contamination was detected on his hands. The surveyor completed the frisk and told the emergency worker to continue on to the shower area. The fireman was instructed to remove his bunker gear and was sent to the shower area to be decontaminated. The emergency worker washed his and was determined to be clean when re-monitored. Emergency workers who could not be decontaminated after two attempts would be sent to a medical facility for further evaluation and decontamination.

As the emergency worker processed through the monitoring/decontamination facility, records were kept covering identification, contact information, monitoring results, and decontamination success and or failure.

All activities described in the demonstration criterion were carried out in accordance with the

plan, procedures and extent-of-play agreement.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- 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

3.3.1.3 Kewaunee County - Luxemburg/Casco Intermediate School - Evacuee/Emergency Worker Registration

As Part of the KPS Radiological Emergency Preparedness Exercise, Kewaunee County demonstrated the capability to establish adequate facilities, resources and trained personnel for monitoring and, if necessary, decontaminating evacuees and emergency workers.

Criterion 1.d.1:

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

Criterion 1.e.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County successfully demonstrated the availability of equipment through the American Red Cross (ARC) to support evacuee registration during out-of-sequence activities conducted from approximately 1838 hours, to 2150 hours, on June 1, 2011, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 North Main Street, Luxemburg, Wisconsin.

American Red Cross volunteers began setting up the Reception Center at approximately 1845 hours. The Reception Center Manager served as the Incident Commander for Reception Center activities. The Reception Center was operational at 1930 hours.

There were two tables staffed by ARC volunteers designated for registration of evacuees that passed through contamination monitoring and two tables with seats designated for use by

evacuees going through registration. At the initial registration table, the ARC asked questions of the evacuees and filled out ARC form 5972, Disaster Shelter Registration for initial registration of each group or family of evacuees. ARC also had registration forms for evacuees that chose to remain at the shelter as well as forms for medical and mental assessments. There were adequate forms for all aspects of evacuee intake and assessment.

Evacuees were directed to the lunch room where the ARC provided a comfort kit. The kit consisted of personal items such as shampoo, hair conditioner, soap, comb, deodorant, wash cloth, toothbrush, and toothpaste. Male kits also had a razor and shaving supplies while children kits added a stuffed animal. Red Cross volunteers indicated sufficient kits were or could be made available to provide comfort to all evacuees designated for the Luxemburg Intermediate School Reception Center.

Evacuees had available a number of seats throughout the registration and evaluation process. Additional tables and seats were available as needed. Cots and bedding were set up in the area and were separated from the general area by barriers that would block viewing of evacuees that chose to sleep there.

The ARC also had ample supplies of snacks and water and would be able to access food as required to supply the shelter.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

Criterion 6.a.1:

As Part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County demonstrated the capability to establish adequate facilities, resources and trained personnel for monitoring and, if necessary, decontaminating evacuees and emergency workers during an out-of-sequence activity from approximately 1838 hours, to 2150 hours, on June 1, 2011, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 North Main Street, Luxemburg, Wisconsin.

The demonstration was conducted by members of the Brown County HAZ-MAT Team who were trained to perform monitoring and decontamination of the general public and emergency workers under State direction.

Local Boy Scouts served as the evacuees who were monitored for the demonstration. Luxemburg Fire Department and Community Service Officers (CSO), which is a volunteer group that works for the County Sheriff, served as the emergency workers who were monitored for the demonstration.

Hallways, walkways and the facility entrances were controlled and monitored by CSOs. American Red Cross (ARC) volunteers ensured that evacuees that were entering the registration area were monitored as free of contamination prior to being allowed access to the registration tables. Each of the staff wore personal protective equipment consisting of their turn-out clothing as required, plastic shoe covers and two pair of rubber gloves to minimize the spread of contamination.

This facility does not have separate showers for male and female evacuees and emergency workers. Evacuees and emergency workers use the same showers in the decontamination area. Males and females would be segregated, guided by gender-appropriate escorts and processed separately. If required, a second shower area could be utilized, but is not part of the reception center plan.

The Luxemburg Fire Department and CSOs were pre-positioned at the Reception Center (RC). Normally, they would report to at the RC for monitoring and, if required, decontamination upon completion of their mission assignment. TSA TPM-903 Personnel Portal Monitors and hand held survey instruments were used to monitor evacuees and emergency workers at the facility. The portal monitors are calibrated annually by Kewaunee Power Station personnel, and all equipment was within their calibration dates. The action level for determining whether an evacuee or emergency worker was required to be decontaminated was a survey instrument reading greater than 100 counts per minute (cpm) over background. Approximately 15 personnel are trained at this facility to operate survey instruments and portal monitors.

Potentially contaminated emergency workers were directed to the monitoring area to be monitored using hand held survey instruments. Individual staff escorts were used to guide emergency workers through the monitoring and decontamination areas. If an emergency worker was found to be contaminated they were directed to the shower area by gender-specific escorts, where their clothing was bagged and stored for later decontamination or disposal. Tyvek coveralls were used to replace contaminated clothing, and individuals who were decontaminated

donned the Tyvek coveralls before being re-monitored upon exiting the shower area.

The total population of the Kewaunee 10-mile Emergency Planning Zone (EPZ) is approximately 6,500 people (based on the Kewaunee County EOP updated November, 2009). The evacuation population that would be expected at the Luxemburg Reception Center is approximately 1,300 individuals based on 20% total EPZ population arriving at the RC. The RC had two portal monitors, which can monitor 240 persons each (480 persons, total) per hour. The maximum population that could be monitored via the portal monitors in a 12-hour period is approximately 2,880 individuals. This number substantially exceeds the 20% (1,300 individuals) required by FEMA guidance to be monitored within 12 hours. In addition to the portal monitors hand-held friskers were available to support personnel monitoring.

Evacuees were monitored using portal monitors. Operability of the monitors was checked in accordance the RC plan and manufacturer's specifications using a 1 micro-Curie Cesium-137 source. Separate passes were made through the monitor at ankle, waist and shoulder height to verify operability of the monitor. The source tripped the monitor on each pass. During this demonstration, both of the portal monitors worked, negating the requirement for the use of the hand held monitoring equipment. To demonstrate evacuee monitoring and decontamination, several evacuees passed through the evacuee monitoring station to establish flow. Monitoring of evacuees required about 10 seconds per evacuee. Significantly more than the required six evacuees from the 10-mile EPZ were monitored. The first five evacuees who walked through a portal monitor did so without activating its alarm. The sixth evacuee was determined by Controller inject to be contaminated. The evacuee who was determined to be contaminated using the portal monitor was re-monitored using a hand-held survey instrument to confirm the location of the contamination (by Controller inject). He was then directed to the shower room for decontamination. After being decontaminated, he was monitored a second time using a hand-held survey instrument and was found to be free from contamination. An "Individual Survey and Decontamination Record" was completed by facility staff, and the evacuee was directed to the ARC Registration Station. The monitoring techniques used were slow and deliberate, with proper positioning of the probe for personnel monitoring. The pancake probes were all covered in a plastic covering as required by the RC Plan and did not come in contact with the evacuee.

A green sticker was placed on each evacuee that successfully processed through the monitors indicating that they were contamination free. Each evacuee was then directed to the ARC Registration Station, where they would be registered as arriving at the Congregate Care Center.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.d.1, 1.e.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

3.3.1.4 Kewaunee County - Luxemburg/Casco Intermediate School - Dosimetry Distribution Point

As part of the KPS Radiological Emergency Preparedness Exercise, Kewaunee County successfully demonstrated that KI and appropriate instructions were available should a decision to recommend use of KI be made and that appropriate record keeping of the administration of KI for emergency workers was maintained.

Criterion 1.d.1:

As Part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County successfully demonstrated the availability of communications equipment to support emergency operations during out-of-sequence activities conducted from approximately 1838 hours, to 2150 hours, on June 1, 2011, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 North Main Street, Luxemburg, Wisconsin.

The primary communications system utilized by Reception Center personnel to communicate with each other on site was the Algoma Fire Rescue Department Motorola Model 1225 hand held VHF radios with lapel microphone/speakers. These units were used when personnel were positioned beyond voice range, for example, at the outer boundaries of the monitoring and decontamination operational area, monitoring stations, dosimetry distribution point stations and Congregate Care Center registration area.

Another communication system in use included emergency vehicle (Luxemburg and Casco fire

trucks) mounted radios which had repeated and non-repeated Fire ground-work channel, as well as radio to radio (point to point) through Kewaunee County Sheriff. The Mark repeater channel is activated by the Kewaunee dispatch as needed for use. Also available were cell phones and the commercial hard wired telephone network units available in the Luxemburg Intermediate School. All primary and all backup systems were functional throughout the exercise and there were no communications failures.

All activities described in the demonstration criteria were carried out in accordance with the plan, procedures and extent-of-play agreement.

Criterion 1.e.1:

As Part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County successfully demonstrated that the equipment, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations and Dosimetry Control Officer (DCO) briefings during an out-of-sequence activity from approximately 1838 hours to 2150 hours on June 1, 2011. The demonstration was conducted at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 Main Street, Luxemburg, Wisconsin.

Emergency, Reception Center and volunteer workers began setting up the Reception Center at approximately 1838 hours. The Reception Center Manager served as the Incident Commander for Reception Center activities. The Reception Center was operational at 1943 hours.

The Dosimetry Distribution Point was set up gymnasium per the Kewanee County Reception Center Procedure. Upon arrival at the Reception Center, the Community Service Officers (CSO), which is a volunteer group that works for the County Sheriff, began to set up the Dosimetry Distribution area. Five stations are set up so that emergency workers would be able to pick up their dosimetry packets, get briefed and register. The stations are set up as Station one, Dosimeter Brief; Station two, KI Consent Area; Table 3, Dosimetry Distribution Table; Station four, Dosimetry Registration Table; and Station 5, Dosimetry Chargers. A CSO estimated approximately 40-50 emergency workers are normally assigned to the Reception Center.

At the Dosimeter Brief station, there were five Health Department personal that served as Dosimetry Control Officers (DCOs) with the responsibility to brief emergency workers on the use of dosimetry, when to take KI if needed and what to do after a work shift has been fulfilled by emergency responder. The DCOs had available 72 dosimeter kits that contained a Landauer

Thermoluminescent Detector (TLD) Dosimeter, two Direct-Reading Dosimeters (DRDs) – an Arrow-Tech 0-200 mR dosimeter and an Arrow-Tech 0 – 20R dosimeter, a Field Personnel Dosimeter Record form, a pencil and tablets simulated to be KI. The TLDs are exchanged annually and were within calibration dates. The DRDs are calibrated annually by Kewaunee Power Station and were within calibration dates.

The Dosimetry Distribution Table was set up by three CSOs, one each for Fire, Law Enforcement and HAZ-MAT, and they filled out the Field Personnel Dosimeter Record forms by validating the serial numbers of each emergency worker TLD and DRDs. The front of the Field Personnel Dosimeter Record forms includes dosimeter use information, instructions for the DRDs and TLD, maximum dose limits of 3 R with reporting requirements (greater than 20 mR reading change), and dosimeter check out forms. The back of the Field Personnel Dosimeter Record form contains a log sheet for recording date, time and readings of both DRDs.

The Dosimetry Charger station was set up with multiple Dosimeter Corporation Model 909 dosimeter chargers. The CSO at that station noted that many more were available on-hand if needed. New batteries from the supply containers were put in the dosimeter chargers at the start of the exercise and are removed prior to stowing.

The dosimetry orientation table had multiple sets of laminated prints with pictures from the Kewaunee County Reception Center Plan. Each set of three laminated prints described a dosimeter, how to read a dosimeter and described how to calibrate a dosimeter. A dosimeter was also available for demonstration.

The Health Officer was interviewed regarding documentation of inventory, testing and calibration records of individual DRDs and survey instruments as well as KI. The Health Officer stated all records are maintained for review at the Kewaunee County EOC.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

Criterion 3.a.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County successfully demonstrated that the KI and appropriate instructions are available should a decision to recommend use of KI be made and that appropriate record keeping

of the administration of KI for emergency workers is maintained. This was demonstrated through Dosimetry Control Officer (DCO) briefings during an out-of-sequence activity from approximately 1838 hours to 2150 hours on June 1, 2011. The demonstration was conducted at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 Main Street, Luxemburg, Wisconsin.

Emergency, Reception Center and volunteer workers began setting up the Reception Center at approximately 1838 hours. The Reception Center Manager served as the Incident Commander and was in charge of Reception Center activities. The Reception Center was declared operational at 1943 hours.

The Dosimetry Distribution area was set up in the Luxemburg Intermediate School gymnasium per the Kewaunee County Reception Center Procedure. Upon arrival at the Reception Center, the Community Service Officers (CSO), which is a volunteer group that works for the County Sheriff, and Health Department personnel began to set up the Dosimetry Distribution area. Five stations are set up so that emergency workers would be able to pick up their dosimetry packets, get briefed on their responsibilities concerning personal radiation monitoring, and register. The stations are set up as Station one, Dosimeter Brief; Station two, KI Consent Area; Station three, Dosimetry Distribution Table; Station four, Dosimetry Registration Table; and Station five, Dosimetry Chargers. Each emergency worker checked in with each station as they registered for assignment.

At the Dosimeter Brief station, there were five Health Department personnel that served as Dosimetry Control Officers (DCOs) with the responsibility to brief emergency workers on the use of dosimetry, when to take KI if needed and what to do after a work shift has been fulfilled by emergency responder. The DCOs had available 72 dosimeter kits that contained a Landauer Thermoluminescent Detector (TLD) Dosimeter, two Direct-Reading Dosimeters (DRDs) – an Arrow-Tech 0-200 mR dosimeter and an Arrow-Tech 0 – 20 R dosimeter, a Field Personnel Dosimeter Record form, a pencil and tablets simulated to be KI. The station also had multiple sets of laminated prints with pictures from the Kewaunee County Reception Center Plan. Each set of prints described a dosimeter, how to read a dosimeter and described how to calibrate a dosimeter. A dosimeter was also available for demonstration.

The DCOs used the Field Personnel Dosimeter Record forms from the Kewaunee County Reception Center Procedure for briefing emergency workers. During the briefing, the DCOs

ensured that each emergency worker had the proper dosimetry and that they would not protect them from radiation. Briefing instructions included that the emergency workers read each of the dosimeters they were issued as soon as possible after receiving them. They were told to read the dosimeter by holding it toward a light source and looking into the end that has the clip so that the measurement scale is horizontal and right side up. They were instructed to read the position of the hairline on the scale and to use a charger to re-zero the dosimeter if the initial reading is more than 2 R for the 0-20 R dosimeter or more than 20 mR for the 0-200 mR dosimeter. The back of the form contains a log sheet for recording date, time and readings of both DRDs. They were instructed to record all reading(s) on the form with the date and time. The brief also included proper placement of all dosimetry and that the DRDs were to be read at thirty-minute intervals or as directed through the emergency worker's supervisor. During the demonstration, emergency workers were instructed at 2017 and 2045 to read their dosimeters and record readings.

The emergency workers were instructed to notify immediately their supervisor if they noticed a change in reading of 20mR or more and that the maximum dose limit was 3 R. If a dosimeter approached the upper limit of its scale, they were to contact their supervisor for resetting or replacement and further instructions. It was noted that the DRDs were sensitive and that the readings can be changed by knocking or dropping the DRD. The briefing instructed that at the end of the operation, the emergency workers were to return equipment, unused KI and the Field Personnel Dosimeter Record form to the Reception Center.

The Dosimetry Distribution Table was set up by three CSOs, one each for Fire, Law Enforcement and HAZ-MAT, and they filled out the Radiation Dosimetry Equipment Inventory forms by validating the serial numbers of each emergency worker TLD and DRDs.

The Dosimetry Chargers station was set up with multiple Dosimeter Corporation Model 909 dosimeter chargers. The CSO at that station noted that many more were available on-hand if needed. Emergency workers ensured that their dosimeters were zeroed and recorded the time, date and initial reading of the dosimeters on the Field Personnel Dosimetry Record form. Some of the emergency workers noted that they could not either read the dosimeter or properly zero it. In those situations, the CSO assisted the emergency worker in correctly reading and zeroing the dosimeters.

Several emergency workers were interviewed and all understood how to read the dosimeters, what the implications of a change in reading meant, whom to contact should they get an

unexpected reading, what their limits were and how often on the form to record their readings.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

Criterion 3.b.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County successfully demonstrated that the KI and appropriate instructions are available should a decision to recommend use of KI be made and that appropriate record keeping of the administration of Potassium Iodide (KI) for emergency workers is maintained. This was demonstrated through Dosimetry Control Officer (DCO) briefings during an out-of-sequence activity from approximately 1838 hours to 2150 hours on June 1, 2011. The demonstration was conducted at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 Main Street, Luxemburg, Wisconsin.

The Dosimetry Distribution area was set up in the Luxemburg Intermediate School gymnasium per the Kewaunee County Reception Center Procedure. Upon arrival at the Reception Center, the Community Service Officers (CSO), which is a volunteer group that works for the County Sheriff, and Health Department personnel began to set up the Dosimetry Distribution area. Five stations are set up so that emergency workers would be able to pick up their dosimetry packets, get briefed on their responsibilities concerning personal radiation monitoring, ingestion of KI and register. The stations are set up as Station one, Dosimeter Brief; Station two, KI Consent Area; Station three, Dosimetry Distribution Table; Station four, Dosimetry Registration Table; and Station five, Dosimetry Chargers. Each emergency worker checked in with each station as they registered for assignment.

At the Dosimeter Brief station, there were five Health Department personnel that served as Dosimetry Control Officers (DCOs) with the responsibility to brief emergency workers on the use of dosimetry, when to take KI if needed and what to do after a work shift has been fulfilled by emergency responder. The DCOs had available 72 dosimeter kits that contained a Landauer Thermoluminescent Detector (TLD) Dosimeter, two Direct-Reading Dosimeters (DRDs) – an Arrow-Tech 0-200 mR dosimeter and an Arrow-Tech 0 – 20R dosimeter, a Field Personnel Dosimeter Record form, a pencil and tablets simulated to be KI.

The DCOs used the Field Personnel Dosimeter Record forms from the Kewaunee County

Reception Center Procedure for briefing emergency workers. During the briefing, the DCOs explained that KI would be ingested only when their supervisor instructs them to do so. The emergency workers were instructed that they would only take one tablet every 24-hours and to keep a log of ingestion, refusal, time and date of their action on the lower portion of the Field Personnel Dosimeter Record form. After the briefing, emergency workers continued on to Station two, KI Consent Area. At this station, emergency workers reviewed the State of Wisconsin KI use – Acknowledgement of Potential Health Risk form. The form include information on the protective aspects of KI in that if taken in advance of or within 4-hours after exposure to radioactive Iodines, KI can effectively block their intake into the thyroid, thus preventing or greatly reducing the possibility of any adverse effects of exposure. In the protection section, the form also states that KI only offers protection against radioactive Iodines and that it offers no protection against other radioactive isotopes which may be released or external exposures resulting from the radioactive plume or deposition. The form also informs the emergency worker on possible side effects of taking KI and that the decision to take KI is voluntary and is the emergency worker's decision. The authority to issue KI resides with the State Radiological Coordinator.

The forms were contained in a three-ring binder and had already been filled out by all possible emergency workers. Each sheet had the emergency worker printed and signed name as well as the date signed. All emergency workers reviewed their personal KI use – Acknowledgement of Potential Health Risk form.

Several emergency workers were interviewed and all understood the benefits and side effects of taking KI, that they were to ingest KI only upon direction from their supervisor and that they were to record taking the KI on the Field Personnel Dosimeter Record form.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.d.1, 1.e.1, 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

3.3.1.5 Kewaunee County - Luxemburg/Casco Intermediate School - Congregate Care Center

As part of the KPS Radiological Emergency Preparedness Exercise, Kewaunee County and the American Red Cross (ARC) Lakeland Disaster Chapter successfully demonstrated the availability of communications equipment to support emergency operations.

Criterion 1.d.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County and the American Red Cross Lakeland Disaster Chapter (ARC) successfully demonstrated the availability of communications equipment to support emergency operations during an out-of-sequence reception center demonstration from approximately 1838 hours, to 2150 hours, on June 1, 2011. The demonstration was conducted at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

According to the ARC Shelter Manager, commercial telephone and cellular phones are the primary and backup means of communications used by the ARC to communicate with the ARC Representative located at the Kewaunee County Emergency Operations Center (EOC). Radio Amateur Civil Emergency Service (RACES) operators and equipment could also be assigned by the Kewaunee County EOC. The ARC personnel at the Congregate Care Center primarily used hand-held radios and would use cellular phones as a backup.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

Criterion 6.c.1:

As part of the Kewaunee power Station (KPS) Radiological Emergency Preparedness Exercise, the State of Wisconsin, Lakeland Disaster Chapter of the American Red Cross (ARC) successfully demonstrated that they had the resources to provide services and accommodations consistent with American Red Cross planning guidelines, and had procedures to assure that evacuees had been monitored for contamination, and had been decontaminated as appropriate prior to entering the congregate care facility during an out-of-sequence reception center

demonstration from approximately 1838 hours, to 2150 hours, on June 1, 2011. The demonstration was conducted at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

For purposes of this out-of-sequence event, the major functions of the Congregate Care Center were staffed as they would have been in an actual event. ARC volunteers participated during the interview and the lead person for each function was interviewed by the evaluator. American Red Cross functions participating in the evaluation included the shelter manger, assistant shelter manager, registration, logistics (feeding, transport, etc.), health services, and family services. The Shelter Manager noted that during an actual event, additional staff would be activated (nurses, etc.). In accordance with the extent-of-play agreement, the supplies and equipment were deployed and set up in the Congregate Care Center.

The Shelter Manager provide the evaluator with a facility layout and ARC Shelter Survey showing that the facility met the guidelines set forth in ARC 5972. The Shelter Manager stated that an entry control would be established just outside the front entrance of Luxemburg Intermediate School gymnasium. The ARC provided volunteers for security and if a problem were to arise at the Congregate Care Center Kewaunee Sheriff's Department would provide additional security. The purpose for the security personnel would be to verify that each person attempting entry had a Personnel Monitoring Record, showing that they had been cleared by the monitoring and registration facility. If a person attempted entry without the form, they would not be allowed access into the facility, and be referred to the monitoring and registration facility at Luxemburg Intermediate School gymnasium.

Those evacuees allowed entrance would then proceed to the registration table in the hallway of the facility, where they would be assisted in completing the ARC Shelter Registration Form. At this point, a determination would be made if they had any special medical, dietary, psychological, or other needs that would require referral to one of the Red Cross support units. They would also register via computer for the Safe and Well program letting their family and friends know that you are safe and where you can be found. This website is designed to help make that communication easier.

The Shelter Manager stated that the center has capacity for housing 100 persons. As needed, the Shelter Manager would use the classrooms off of the main hallway for special needs, such as nursing mothers, or people with assistance animals. The ARC has a trailer loaded with all

necessary supplies (cots, blankets, generators, water, and other supplies) to support the facility. If the population exceeded the capacity of the trailer, the Shelter Manager would call for supplies from other pre-staged facilities around the area, or from ARC resources from around the State. If the shelter capacity approached 75% capacity, the Shelter Manager would facilitate the process of getting the additional supplies from other Congregate Care Facilities, using additional staff from the Lakeland Disaster Chapter, or other Chapters within the State.

In addition to the dormitory areas, the facility has men's and women's restrooms and showers, a cafeteria with a full service kitchen, activity rooms for children, a quiet/reading room and a nurse's station. Additional classrooms could be used for mental health and/or client casework room, or a variety of other functions.

Food and drink would initially be provided from local restaurants. The ARC has arrangements through local vendors and food providers for both short term and long term needs. Kitchen facilities are available at this location. Snacks and drinks were provided for evacuees during this demonstration.

Evacuees were allowed to depart as they requested. Prior to departure, the evacuee was requested to provide a relocation address and phone number. This information along with departing time and date was recorded on the Congregate Care Center Assignment Worksheet.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- 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

3.3.1.6 Kewaunee County - Luxemburg Ambulance Service - Medical Service - Transportation

As part of the KPS Radiological Emergency Preparedness Exercise, Kewaunee County and the Luxemburg Rescue Squad Transportation had the appropriate space, adequate resources and trained personnel to provide transport and medical services to a contaminated injured individual.

Criterion 1.d.1:

As part of the Kewaunee Power Station (KPS) radiological Emergency Preparedness Exercise, Kewaunee County and the Luxemburg Ambulance Squad properly demonstrated at least two communication systems (primary cellular telephone, secondary narrow band radio) were available and operated properly, and communication links were established with appropriate locations. Communications capabilities were managed in support of emergency operations. The demonstration was conducted during an out-of-sequence activity on June 1, 2011, from approximately 1830 hours, to 2150 hours, at the Luxemburg/Casco Intermediate School District, Kewaunee County Reception Center, 318 N. Main Street, Luxemburg, Wisconsin.

Communications equipment and procedures were used as needed for the transmission and receipt of exercise messages. The Luxemburg Rescue Squad had the capability to access at least one communication system (primary cellular phone) that was independent of the commercial telephone system. They demonstrated the capability to manage the communication systems and ensure that all message traffic was handled without delays that might disrupt the conduct of emergency operations.

All activities described in the demonstration criterion were conducted in accordance with the plans, procedures and extent-of-play agreement.

Criterion 1.e.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, the Luxemburg Rescue Squad demonstrated that equipment and supplies to support operations, dosimetry, potassium iodide (KI) and other supplies were sufficient to support emergency operations. The demonstration was conducted during an out-of-sequence activity on June 1, 2011, from approximately 1830 hours, to 2150 hours, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

Equipment within the rescue squad facility was sufficient and consistent with the role assigned to the rescue squad in the Kewaunee County plans and procedures in support of emergency operations. Sufficient quantities of Model 862 low range and Model 622 medium range direct-reading dosimeters, Landauer Luxel luminescent permanent record dosimeters, and Model 909 dosimeter chargers were available for rescue squad personnel. The direct-reading dosimetry allowed the rescue squad personnel to read the administrative reporting limit of an increase of 25 mR in a 15-minute time period and a maximum exposure limit of 3 R, as indicated in the Kewaunee County plans and procedures. There were sufficient quantities of simulated 130 mg KI tablets available for rescue squad personnel for demonstration purposes during the exercise.

All other activities described in the demonstration criterion were conducted in accordance with the plans, procedures and extent-of-play agreement.

Criterion 3.a.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, the Luxemburg Rescue Squad was provided with dosimetry and procedures, and managed radiological exposure to rescue squad personnel in accordance with the Kewaunee County plans and procedures. However, an area of concern is that the plans and procedures did not provide for respiratory protection as part of the personal protective equipment (PPE). The rescue squad crew members periodically, and at the end of their mission read their dosimeters and recorded the readings on their "Personnel Monitor Record Forms". The demonstration was conducted during an out-of-sequence activity on June 1, 2011, from approximately 1830 hours, to 2150 hours, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

The Luxemburg Rescue Squad personnel were provided with model 862 low range and model 622 medium range direct reading dosimeters (DRDs), Landauer Luxel luminescent permanent record dosimeters, model 909 dosimeter chargers, and instructions on the use of dosimetry. The DRDs allowed the rescue squad crew members to read the administrative reporting limit of an increase of 25 mR in a 15- minute time period and a maximum exposure limit of 3 R as contained in the Kewaunee County plans and procedures. Each crew member had the basic knowledge of radiation exposure limits as specified in the Kewaunee County plans and procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control were demonstrated through the use of their "Personnel Monitor Record Forms".

There were provisions of appropriate safety and health equipment according to the Kewaunee County plans and procedures. However, as mentioned above, an area of concern is that the plans and procedures did not provide for respiratory protection as part of the personal protective equipment (PPE).

During an interview, the Luxemburg Rescue Squad crew members explained the procedures to be followed when administrative exposure limits and turn-back values were reached. All crew members had low range and medium range direct reading dosimeters and each crew member had their own permanent record dosimeter.

All activities described in the demonstration criterion were conducted in accordance with the plans, procedures and extent-of-play agreement.

Criterion 3.b.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County and the Luxemburg Rescue Squad properly demonstrated the use of potassium iodide (KI) and appropriate instructions were made available for crew members, in the event that a decision to recommend the use of KI was made. The ability to maintain appropriate record keeping of the administration of KI for rescue squad personnel was made available through the use of their "Personnel Monitor Record Forms". The demonstration was conducted during an out-of-sequence activity on June 1, 2011, from approximately 1830 hours, to 2150 hours, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

Although the scenario did not drive the use of KI, during an interview, the Luxemburg Rescue Squad crew members demonstrated their basic knowledge of procedures for the use of KI. They explained that they would only take the KI if instructed to do so by their supervisor and record the date and time of the KI use on their "Personnel Monitor Record Forms" as indicated in the Kewaunee County plans and procedures. In addition, they explained that an iodine allergy would be contraindication to taking KI. KI had an expiration date of February 2014.

All activities described in the demonstration criterion were conducted in accordance with the plans, procedures and extent-of-play agreement.

Criterion 6.d.1:

As part of the Kewaunee Power Station (KPS) Radiological Emergency Preparedness Exercise, Kewaunee County and the Luxemburg Rescue Squad Transportation had the appropriate space, adequate resources and trained personnel to provide transport and medical services to a contaminated injured individual. The demonstration was conducted during an out-of-sequence activity on June 1, 2011, from approximately 1830 hours, to 2150 hours, at the Kewaunee County Reception Center, Luxemburg Intermediate School, 318 N. Main Street, Luxemburg, Wisconsin.

Contamination control efforts did not delay urgent medical care for the victim. Crew members of the Luxemburg Rescue Squad demonstrated the capability to transport the contaminated injured individual. As per the scenario the patient was transported to the reception center by another evacuee that discovered him along side the road. The patient had a head wound and was disorientated. Upon arrival to the reception center, the Luxemburg Ambulance personnel successfully treated the patient and removed patient from vehicle. The ambulance crew properly cocooned the patient, being constantly aware not to cross contaminate. The patient was loaded into the ambulance and the hospital was contacted by one of the crew members via cellular phone. Normal communications between the ambulance and the receiving medical facility were demonstrated at approximately 2045 hours.

The rescue squad crew members demonstrated, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required. Monitoring of the victim was deferred to the medical facility. Appropriate contamination control measures were demonstrated. As soon as contact with medical facility as per extent-of-play the transportation portion of drill was terminated, with no actual transport of patient to hospital.

All activities described in the demonstration criterion were conducted in accordance with the plans, procedures and extent-of-play agreement.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 6.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

3.3.1.7 Manitowoc County - Emergency Operations Center

Manitowoc County successfully demonstrated the capability to establish sufficient facilities for the conduct of emergency response operations.

Criterion 1.b.1:

Manitowoc County successfully demonstrated the capability to establish sufficient facilities for the conduct of emergency response operations. The demonstration was conducted during an out-of-sequence activity on June 1, 2011, from approximately 1300 hours to 1500 hours, at the newly constructed Manitowoc County Emergency Operations Center (EOC), Manitowoc County demonstrated that the EOC had adequate facilities to support emergency response operations for an event at the Kewaunee Nuclear Power Station. The EOC is located in the first floor located at 1024 South 9th Street, Manitowoc, WI.

The newly constructed Manitowoc County EOC was evaluated for the first time in support of the Kewaunee Nuclear Power Station. Access to the EOC was through entrance foyers on the east side of the building. The inside doors of the foyer were electrically locked and controlled. The doors could only be opened by badged employees or by pressing the call button to allow access by sheriff dispatch or Emergency Management personnel. Other entrances to the building were from a parking lot that was secured by locked doors and only employee access was permitted. Security personnel were not assigned, nor needed, during the demonstration, but could be stationed at the desks in the entrance. The Manitowoc EOC was spacious with 37 work stations each with their own ethernet and phone connection. Each workstation was not set up during normal operations but each work area has corresponding bins which contained a laptop computer, plans and procedures, a phone and enough administrative supplies to properly conduct assigned tasks, and can be set up in a matter of minutes to become fully functional. A floor plan was available; the Work stations were permanently arranged in a box configuration with the RACES operator in their own work station along the north/east wall providing ample room for workers to maneuver around the work room. The EOC had a sound system that can be heard on every floor in the building, including the lavatories. The EOC had private as well as public Wireless Fidelity (WiFi) capabilities. There were two wide Liquid Crystal Display (LCD) screens on each end of the room along with dry erase boards and two Panasonic overhead

projectors along with drop down screens. There were also a master podium with a laptop computer and a wired and wireless microphone.

The EOC was adequately furnished. Both male and female restrooms were available on the floor. The facility also had a lunch room and a galley for workers to take breaks located in the basement. The EOC had adequate lighting from ceiling lights and windows. Ventilation was adequate. The Manitowoc EOC had adequate backup power and facilities. By interview, Manitowoc County indicated that the entire building had one 350 kw backup diesel generator to power the building. Each work station has a Universal Power Source (UPS) device to keep each station operating until the backup power generators automatically start.

The Manitowoc EOC is backed up by an alternate facility; the prior Emergency Operations Center located across the street in the case the primary becomes disabled. By interview, qualified with this arrangement, the EOC has adequate redundant systems to maintain power and continue operations even when the main facility is without power.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.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

SECTION 4: CONCLUSION

The Final Report was prepared by the staff of the U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) Region V, Radiological Emergency Preparedness Program.

No Deficiencies were identified for any jurisdiction during this demonstration.

There were no Areas Requiring Corrective Action (ARCAs) from previous exercises identified.

There was one ARCA identified for the State of Wisconsin. The ARCA identified for the State of Wisconsin was issued under Criterion 6.b.1. – Facility/Offsite Response Organization has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. Vehicle monitoring and decontamination staff misclassified vehicle contamination. This criterion was successfully re-demonstrated.

Based on the results of the June 1, 2011, demonstration, the offsite radiological emergency response plans and preparedness for the State of Wisconsin and affected local jurisdictions, site-specific to the Kewaunee Power Station, 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.

APPENDIX A: EXERCISE TIMELINE

No Timeline required for this out-of-sequence Drill.

APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the KPS REP out-of-sequence demonstrations on June 1, 2011. The Team Leaders are indicated by an asterisk “(*)” before their names. The organization which each evaluator represents is indicated by the following abbreviations:

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

TITLE	NAME	ORGANIZATION
RAC Chairperson	William E. King	DHS/FEMA
Exercise Director	Stephen Tulley	DHS/FEMA
Site Specialist	James King	DHS/FEMA

DATE: 2011-06-01, SITE: Kewaunee Power Station, WI

LOCATION	EVALUATOR	AGENCY
State of Wisconsin - Luxemburg/Casco Intermediate School - Emergency Worker Monitoring - Decontamination of Equipment Including Vehicles	Carl Bebrich	FEMA
State of Wisconsin - Luxemburg/Casco Intermediate School - Evacuee/Emergency Worker Monitoring and Decontamination	Edward Diaz	FEMA
Kewaunee County - Luxemburg/Casco Intermediate School - Evacuee/Emergency Worker Registration	Todd Gemskie	FEMA
Kewaunee County - Luxemburg/Casco Intermediate School - Dosimetry Distribution Point	Todd Gemskie	FEMA
Kewaunee County - Luxemburg/Casco Intermediate School - Congregate Care Center	Edward Diaz	FEMA
Kewaunee County - Luxemburg Ambulance Service - Medical Service - Transportation	*James King	FEMA
Manitowoc County - Emergency Operations Center	*James King	FEMA
* Team Leader		

APPENDIX C: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ARC	American Red Cross
CFD	Casco Fire Department
CSO	Community Service Officers
DCO	Dosimetry Control Officer
DHS	Department of Homeland Security
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
FEMA	Federal Emergency Management Agency
GM	Geiger Mueller
HTL	Health Team Leader
KPS	Kewaunee Power Station
LCD	Liquid Crystal Display
PHD	Public Health Department
RACES	Radio Amateur Civil Emergency Services
RC	Reception Center
RCM	Reception Center Manager
REP	Radiological Emergency Preparedness
UPS	Universal Power Source

APPENDIX D: EXERCISE PLAN

No exercise plan used during this drill, all information can be found in scenario "Appendix D".

APPENDIX E: KEWAUNEE RECEPTION CENTER SCENARIO

RECEPTION CENTER DRILL SCENARIO

Kewaunee County

LUXEMBURG RECEPTION CENTER

I. PROPOSED SCHEDULE

Date: June 1, 2011
Time: ~6:30 p.m. to ~9:00 p.m.
Location: Luxemburg Intermediate School
318 N. Main Street
Luxemburg, Wisconsin 54217

II. PURPOSE

This simulated radiological emergency is being conducted to exercise the setup and operation of the reception center in Kewaunee County. The basic objective is to assess the ability of county and state personnel to setup and operate Kewaunee County Reception Center in response to a radiological incident at the Kewaunee Nuclear Power Plant.

III. OBJECTIVES OF THE DRILL

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

IV. EXTENT OF PLAY

Kewaunee County and the State of Wisconsin will demonstrate these objectives between ~6:00 p.m. through ~9:00 p.m. on June 1, 2011 at the Luxemburg Intermediate School in Luxemburg. Kewaunee County is responsible for registering

evacuees and assigning them to appropriate congregate care facilities. The state is responsible for directing the radiological monitoring and decontamination portions of this objective.

State health monitoring teams will demonstrate radiological monitoring and decontamination of evacuees, emergency workers, and vehicles in accordance with the procedures set forth in the county's reception center plan, the State EOP, and the DHS-RPS *Nuclear Incident Response Plan*. Health monitoring teams will include personnel from the Department of Health Services Radiation Protection Section, the Brown County Hazmat team, and individuals from the county who have received training as Auxiliary Health Monitors. Health monitoring personnel from the county will work under the supervision of DHS-RPS staff, and should be evaluated as part of the State of Wisconsin's response.

Once the reception center is operational and monitors have surveyed several evacuees to establish flow, at least six evacuees will be monitored and registered for evaluation purposes, with one evacuee requiring decontamination. At least two evacuee vehicles will be monitored with one vehicle requiring decontamination.

Following demonstration of monitoring and decontamination of evacuees and their vehicles, at least one emergency worker will be monitored and require decontamination. At least one emergency worker vehicle will be monitored and require decontamination.

V. NARRATIVE SCENARIO

Activation of the Kewaunee Reception Center will commence at approximately 6:30 p.m. on Wednesday, June 1, 20011 in response to notification that a radiological incident has occurred at the Kewaunee Power Station.

Once the center is operational, processing of evacuees will commence. At least six evacuees will be monitored. Contamination at levels greater than 100 cpm above background will be detected on one evacuee, who will be sent to the decontamination area for decontamination. All evacuees will be registered in accordance with reception center procedures. One emergency worker will also be monitored and will require decontamination.

Two evacuee vehicles will be monitored with one having contamination levels greater than 100 cpm above background detected on the wheel wells. This vehicle will be directed to the vehicle decontamination area for decontamination. One emergency worker vehicle will be monitored and require decontamination. Section VI contains the controller data for contamination levels.

VI. SCENARIO THIS IS A DRILL

Scenario Phase Controller Message/Notes Evacuee monitoring Sixth evacuee will be contaminated

Contamination levels:

- Left palm 225 cpm >bg
- Right palm 375 cpm >bg
- Left forearm 300 cpm >bg

=====

Evacuee First decontamination lowers contamination levels decontamination to less than 100 cpm above background

=====

Evacuee vehicle Second vehicle will be contaminated monitoring Contamination levels

- Wheel wells 900 cpm >bg

=====

Evacuee vehicle First decontamination lowers contamination levels decontamination to less than 100 cpm above background

=====

Emergency worker - Seat of pants 700 cpm >bg Monitoring - Both palms 1000 cpm >bg

- Shoes 2000 cpm >bg

=====

Emergency worker First decontamination lowers contamination levels to decontamination less than 100 cpm above background

=====

Emergency vehicle - Wheel wells 1900 cpm >bg monitoring - Rear end 1300 cpm >bg

=====

Emergency vehicle First decontamination lowers contamination levels to decontamination less than 100 cpm >bg

END OF DRILL

MS-1 AMBULANE DRILL SCENARIO
Kewaunee County
Luxemburg Ambulance Service

I. PROPOSED SCHEDULE

Date: June 1, 2011
Time: ~ 6:30 p.m.
Location: Luxemburg Intermediate School
318 N. Main Street
Luxemburg, Wisconsin 54217
Injury/Illness: Unconscious

II. PURPOSE

This simulated radiation medical emergency is being conducted to exercise the emergency medical response in Kewaunee County. The basic objective is to assess the ability of the pre-hospital medical service to handle a contaminated and injured patient.

III. OBJECTIVES OF THE DRILL

Terminal Objective:

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

Demonstration Objectives:

To accomplish the terminal objective, drill participants will adequately:

- Implement appropriate contamination control measures during preparation and transport of individuals from the accident site.
- Determine the identity of the medical facility to which the individual will be transported and transport the individual without undue delay.

- Demonstrate the capability to maintain timely and accurate communications with the receiving medical facility.
- Demonstrate the capability to follow policies, implement procedures, and use equipment/facilities as delineated in the applicable emergency response plan.

IV. NARRATIVE SCENARIO

This simulated radiation accident begins as a member of the general public arrives at the reception center in Luxemburg. The individual has been evacuated from the area around the Kewaunee Nuclear Plant due to an accident and release of radioactive materials. While driving to the reception center, via a locally known shortcut, the person swerves to avoid a deer in a wooded area and drives off the road. While exiting the car in the ditch the individual trips on a downed tree branch, falling and striking their forehead on a rock resulting in a severe laceration. A short time later, while the victim lay dazed next to their car, another vehicle comes along and stops to help. While assisting the injured person, both are exposed to the passing plume. Eventually they leave, driving the injured person to the reception center.

The driver tells reception center staff that the car and passengers may have been exposed to the radioactive plume resulting in potential contamination of both. The ambulance crew stationed at the reception center treats the victim, implements contamination control measures, and loads the individual into the ambulance for transport to the hospital. Reception center staff is trained not to survey evacuees requiring immediate medical attention, since thorough surveys will be performed at the receiving hospital.

Transport will be simulated and drill may be terminated when the victim is loaded and the simulated notification of the hospital has been completed.

V. SCENARIO

THIS IS A DRILL

DO NOT initiate actions affecting normal operations

Scenario Phase Controller Message/Notes

- Ambulance staff DRDs read <1 mR throughout the drill
- Yellow herculite will NOT be used inside of the ambulance

EMS arrival Medical Conditions Conscious level: alert/disoriented

Respiration: 25

Pulse: 101

Blood pressure: 101/69

Skin: pale/cool/diaphoretic

Pupils: equal/reactive to light

Other: open wound to forehead / minor bleeding / patient experiencing bad headache / light sensitive

In ambulance Medical Conditions

Conscious level: alert/disoriented

Respiration: 19

Pulse: 101

Blood pressure: 102/73

Skin: pale/cool/diaphoretic

Pupils: equal/reactive to light

Other: open wound to forehead / minor bleeding / patient experiencing bad headache / light sensitive Radiological Conditions

As above, but victim is cocooned in blankets.

Termination:

Termination Message

Upon simulated ambulance call to the hospital.

END OF DRILL

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