

After-Action Report / Improvement Plan

Exercise Date – March 23, 2021

Radiological Emergency Preparedness (REP) Program



Byron Station



FEMA

Published June 15, 2021

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EXECUTIVE SUMMARY

On March 23, 2021, the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) Region V Radiological Emergency Preparedness Program staff evaluated a Partial-Participation Plume Exposure Pathway Exercise in the Emergency Planning Zone (EPZ) for the Byron Station.

Byron Station is located in Ogle County. The 10-mile Plume Exposure Pathway EPZ encompassed parts of both Ogle and Winnebago Counties.

The purpose of the exercise was to assess the level of state and local preparedness in responding to an incident at Byron Station. This exercise was conducted in accordance with FEMA's policies and guidance concerning the exercise of state and local radiological emergency response plans and procedures. The previous federally evaluated exercise at this site was conducted on October 29, 2019. The qualifying emergency preparedness exercise was conducted on November 15, 1983.

Officials and representatives from the State of Illinois and the risk counties of Ogle and Winnebago, and the Licensee participated in this exercise. State and local officials demonstrated knowledge of their emergency response plans and procedures and successfully implemented them. The DHS/FEMA evaluation team identified no Level 1 or Level 2 Findings and no Plan Issues.

The DHS/FEMA wishes to acknowledge the efforts of the many individuals who participated in the exercise and made it a success. Approximately 65 individuals participated in the off-site portion of the exercise, including local volunteers. The professionalism and teamwork of the participants was evident throughout all phases of the exercise.

The COVID-19 Pandemic, and other disasters that occurred during the year 2020 and continued during the year 2021, presented the State of Illinois with substantial logistical and communications challenges for simultaneously developing and implementing a successful commercial nuclear power plant exercise plan in a combined virtual and physical environment. The exercise was evaluated virtually using Cisco Webex collaboration software configured by the State of Illinois Emergency Management Agency (IEMA) and Ogle and Winnebago Counties to establish multiple channels, each with audio/visual, chat, and exercise-related document sharing features.

This exercise also involved extensive use of well-documented Actual Incident Credit, as well as the successful tethering and implementation of virtual technologies and logistics, to assess the state's capabilities for protecting public health and safety. These combined efforts significantly expand the REP Program's relevance and capabilities. Pursuant to the documented and ongoing COVID-19 Pandemic response, Ogle County requested and received Full Actual Incident Credit for the Evaluation Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.c.1, and Partial Actual Incident Credit for Evaluation Criteria 3.d.1, 5.b.1., and Winnebago County requested and received Full Actual Incident Credit for the Evaluation Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1.

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SECTION 1: Exercise Overview

The 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 Radiological Emergency Preparedness Plans 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 December 7, 2015 (Federal Register, Vol. 82, No. 88, May 9, 2017); 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.

A REP Partial-Participation Plume Exposure Pathway Exercise was conducted on March 23, 2021 and evaluated by DHS/FEMA to assess the capabilities of State and local offsite emergency preparedness organizations in implementing their plans and procedures to protect the public's health and safety during a radiological emergency involving the Byron Station. The purpose of this exercise report is to present the exercise results and findings on the performance of the Off-Site Response Organizations (ORO) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the Federal evaluation team, with final determinations made by the DHS/FEMA Region V RAC Chair, and approved by the DHS/FEMA Headquarters.

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

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980; and
- FEMA P-1028 REP Program Manual, dated January 2016.

1.1 EXERCISE DETAILS

EXERCISE NAME

2021 Byron Station Radiological Emergency Preparedness, Partial-Participation, Plume Exposure Pathway Exercise

TYPE OF EXERCISE

Plume Exposure Pathway

EXERCISE DATE

March 23, 2021

LOCATIONS

See Appendices C and E for a complete list of locations.

SPONSORS

Illinois Emergency Management Agency
2200 South Dirksen Parkway
Springfield IL 62703

Exelon Corporation
4300 Winfield Road
Warrenville, IL 60555

PROGRAM

Department of Homeland Security/Federal Emergency Management Agency Radiological Emergency Preparedness Program

MISSION

Response

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 exercise:

STATE ORGANIZATIONS

- Illinois Emergency Management Agency (IEMA)
- Illinois State Police
- Illinois State Emergency Operations Center

RISK COUNTY ORGANIZATIONS

- Ogle County Board Chair
- Ogle County Community Organizations Active in Disasters
- Ogle County Consolidated Dispatch Center
- Ogle County Dosimetry Control Officer
- Ogle County Emergency Management Agency
- Ogle County Health Department
- Ogle County Highway Department
- Ogle County Information Technology
- Ogle County Regional Office of Education
- Ogle County Sheriff's Office
- Byron Police Department
- Community Unit School District #226
- Winnebago County 911
- Winnebago County Board Chairman
- Winnebago County Emergency Services and Disaster Agency
- Winnebago County Health Department
- Winnebago County Regional Office of Education
- Winnebago County Sheriff's Office
- Rockford Fire Department

PRIVATE ORGANIZATIONS

- American Red Cross
- Exelon Corporation
- WRHL/WYOT Radio Station

FEDERAL ORGANIZATIONS

- U.S. Department of Homeland Security
- Federal Emergency Management Agency
- U.S. Nuclear Regulatory Commission – Region III

SECTION 2: Exercise Design Summary

2.1 EXERCISE PURPOSE AND DESIGN

The Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) administers the Radiological Emergency Preparedness (REP) Program pursuant to the regulations found in Title 44 Code of Federal Regulation (CFR) parts 350, 351, and 352. Title 44 CFR Part 350 names 16 planning standards that form the basis for radiological emergency response planning for state, tribal, and local governments impacted by the Emergency Planning Zones established for each nuclear power plant site in the United States. Title 44 CFR Part 350 sets forth the mechanisms for the formal review and approval of state, tribal, and local government radiological emergency response plans and procedures by FEMA. One of the REP Program requirements established by these regulations is the biennial exercise of offsite response capabilities. During these exercises, FEMA evaluates state, tribal, and local government plans, procedures, and actions to protect the health and safety of the public in the event of a radiological emergency at the nuclear plant.

The DHS/FEMA provides a statement with the transmission of this After-Action Report/Improvement Plan to the United States NRC that the affected state, tribal, and local plans and preparedness are: (1) adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency; and (2) capable of being implemented. The report and statement are based on the results of this exercise, review of the radiological emergency response plans and procedures, and verification of the periodic requirements set forth in *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980* (NUREG-0654/FEMA-REP-1, Rev. 1) through the annual letter of certification and staff assistance visits.

Formal submission of the radiological emergency response plans for the Byron Station to FEMA Region V by the State of Illinois, Ogle County, and Winnebago County occurred on March 28, 1982. Formal approval of these plans was granted by FEMA on September 12, 1984, under 44 CFR 350.

2.2 FEMA CORE CAPABILITIES AND EXERCISE OBJECTIVES

Core Capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items. Using the Homeland Security Exercise and Evaluation Program methodology, the exercise objectives meet the Radiological Emergency Preparedness Program requirements and encompass the emergency preparedness evaluation areas. The critical tasks to be demonstrated were negotiated with the State of Illinois, Ogle County, and Winnebago County. The Core Capabilities demonstrated during this exercise were:

Operational Coordination: Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of Core Capabilities. Mobilize all critical resources and establish command, control, and coordination structures within the affected community, in other coordinating bodies in surrounding communities, and across the Nation, and maintain as needed throughout the duration of an incident. Enhance and maintain command, control, and coordination structures consistent with the National Incident Management System (NIMS) to meet basic human needs, stabilize the incident, and transition to recovery.

Situational Assessment: Provide all decision makers with decision-relevant information regarding the nature and extent of the hazard, any cascading effects, and the status of the response. Deliver information sufficient to inform decision making regarding immediate lifesaving and life-sustaining activities, and engage governmental, private, and civic sector resources within and outside of the affected area to meet basic human needs and stabilize the incident. Deliver enhanced information to reinforce ongoing lifesaving and life-sustaining activities, and engage governmental, private, and civic sector resources within and outside of the affected area to meet basic human needs, stabilize the incident, and transition to recovery.

Public Information and Warning: Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken and the assistance being made available. Inform all affected segments of society of critical lifesaving and life-sustaining information by all means necessary, including accessible tools, to expedite the delivery of emergency services and aid the public to take protective actions. Deliver credible and actionable messages to inform ongoing emergency services and the public about protective measures and other life-sustaining actions, and facilitate the transition to recovery.

Environmental Response/Health and Safety: Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities. Identify, assess, and mitigate worker health and safety hazards, and disseminate health and safety guidance and resources to response and recovery workers. Minimize public exposure to environmental hazards through assessment of the hazards and implementation of public protective actions. Detect, assess, stabilize, and clean up releases of oil and hazardous materials into the environment, including buildings/structures, and properly manage waste. Identify, evaluate, and implement measures to prevent and minimize impacts to the environment, natural and cultural resources, and historic properties from all-hazard emergencies and response operations.

On-Scene Security, Protection, and Law Enforcement: Ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for response personnel engaged in lifesaving and life-sustaining operations. Establish a safe and secure environment in an affected area. Provide and maintain on-scene security and meet the protection needs of the affected population over a geographically dispersed area while eliminating or mitigating the risk of further damage to persons, property, and the environment.

Critical Transportation: Provide transportation (including infrastructure access and accessible transportation services) for response priority objectives, including the evacuation of people and animals, and the delivery of vital response personnel, equipment, and services into the affected areas. Establish physical access through appropriate transportation corridors and deliver required resources to save lives and to meet the needs of disaster survivors. Ensure basic human needs are met, stabilize the incident, transition into recovery for an affected area, and restore basic services and community functionality. Clear debris from any route type (i.e., road, rail, airfield, port facility, waterway) to facilitate response operations.

Mass Care Services: Provide life-sustaining and human services to the affected population, to include hydration, feeding, sheltering, temporary housing, evacuee support, reunification, and distribution of emergency supplies. Move and deliver resources and capabilities to meet the needs of disaster survivors, including individuals with access and functional needs. Establish, staff, and equip emergency shelters and other temporary housing options (including accessible housing) for the affected population. Move from

congregate care to non-congregate care alternatives and provide relocation assistance or interim housing solutions for families unable to return to their pre-disaster homes.

Public Health, Healthcare, and Emergency Medical Services: Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical and behavioral health support, and products to all affected populations. Deliver medical countermeasures to exposed populations. Complete triage and initial stabilization of casualties, and begin definitive care for those likely to survive their injuries and illnesses. Return medical surge resources to pre-incident levels, complete health assessments, and identify recovery processes.

Operational Communications: Ensure the capacity for timely communications in support of security, situational awareness, and operations, by any and all means available, among and between affected communities in the impact area and all response forces. Ensure the capacity to communicate with both the emergency response community and the affected populations and establish interoperable voice and data communications between Federal, tribal, state, and local first responders.

Infrastructure Systems: Stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore and revitalize systems and services to support a viable, resilient community. Re-establish critical infrastructure within the affected areas to support ongoing emergency response operations, life sustainment, community functionality, and a transition to recovery. Provide for the clearance, removal, and disposal of debris. This core capability includes the capability to address roadway impediments due to landslides and other events that impair/impede safe evacuation of the public.

The Core Capabilities and their associated Evaluation Criteria selected for demonstration by the jurisdictions establish the assessment objectives for the exercise. These Core Capabilities, when successfully demonstrated, meet the exercise objectives.

The objectives for this exercise were as follows:

Objective 1: Demonstrate the ability to provide direction and control and make protective action decisions through the state emergency operations centers, county emergency operations centers, and field activities by exercise play and discussion of plans and procedures.

Objective 2: Demonstrate the ability to make protective action decisions affecting state and county emergency workers and the public through exercise play and discussion of plans and procedures.

Objective 3: Demonstrate the ability to implement protective actions for state and county emergency workers and the public through exercise play and discussion of plans and procedures.

Objective 4: Demonstrate the ability to activate the prompt alert and notification system utilizing the primary notification system and the emergency alert system through exercise play and discussion of plans and procedures.

Objective 5: Demonstrate the effectiveness of plans, policies, and procedures in the joint information centers and the joint information system for public and private sector emergency information communications through exercise play and discussion of plans and procedures.

Objective 6: Demonstrate the ability to monitor, decontaminate, register, and shelter evacuees through exercise play and discussion of plans and procedures.

Objective 7: Demonstrate the ability to provide dose projection and protective action decision making for the plume phase.

Objective 8: Demonstrate the capacity for timely communications in support of security, situational awareness, and operations in accordance with the plan, procedures, and Extent-of-Play Agreement, among and between affected communities in the impact area and all response forces.

Objective 9: Demonstrate the capacity to stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore and revitalize systems and services to support a viable, resilient community. Demonstrate the capacity to provide transportation (including infrastructure access and accessible transportation services) for response priority objectives, including the evacuation of people and animals, and the delivery of vital response personnel, equipment, and services into the affected areas.

Collectively, these nine Objectives successfully demonstrated the Core Capabilities and Evaluation Criteria selected by the jurisdictions in accordance with NUREG-0654/FEM-REP-1 and the REP Program Manual (FEMA P-1028, dated January 2016).

SECTION 3: Analysis of Capabilities

3.1 SUMMARY RESULTS OF EXERCISE EVALUATION

This section provides a combined assessment of state and local jurisdictions based upon their collective demonstrated performance under the core capabilities associated with the exercise evaluation criteria described in Appendix E Extent-of-Play Agreements. It employs an integration of the Homeland Security Exercise Evaluation Program and REP Program evaluation methodologies – an analytical process used to assess the demonstration of specific capabilities during an exercise. A capability provides a means to perform one or more critical tasks under specified conditions and to specific performance standards. Core capabilities form the foundation of the National Preparedness System. The REP Program evaluation criteria provide the conditions and performance standards for establishing reasonable assurance that State and Local authorities can protect public health and safety in response to a nuclear power plant accident.

An overall summary of demonstrated capabilities is presented in Section 3.2, Tables 3.2.1 and 3.2.2, of this report. Criteria-specific narrative summaries are presented in Section 3.3 of the report. The narratives summarize observations made pursuant to the REP Program Evaluation Criteria used to assess the organizations and locations that were selected by the State of Illinois, Ogle County, and Winnebago County. The organizations, locations, and evaluation criteria selected by the State of Illinois, Ogle County, and Winnebago County are described in Appendix E, Extent-of-Play Agreements, which were approved by DHS/FEMA on March 9, 2021.

The results of the assessment are summarized below by Core Capability, as demonstrated during the March 23, 2021, Byron Station REP Partial-Participation Radiological Emergency Preparedness Exercise.

Operational Coordination: Key leadership personnel established and maintained a unified and coordinated operational structure which provided effective and responsive command, direction and control and coordination within and between the affected jurisdictions to meet basic human needs and stabilize the incident.

Critical stakeholders were appropriately integrated within the overall decision-making process, which enabled protective action recommendations to be evaluated in an appropriate and timely manner. This process included input from both relevant critical stakeholders and support personnel and took into account the safety and well-being of emergency workers and the general public and protecting property and infrastructure protective action decisions were made without undue delay.

Situational Assessment: Decision makers were provided with decision-relevant information regarding the nature and extent of the simulated radiological and other hazards, any cascading effects, and the status of the response. The Illinois Emergency Management Agency Radiological Emergency Assessment Center demonstrated proficiency in the use of dose assessment software to calculate dose projections independent of the Byron Station's dose projections. The staff calculated hypothetical dose projections based on plant conditions, possible release scenarios, and Controller-injected field monitoring team data. Leadership was prepared to gather and deliver enhanced information to reinforce lifesaving and life-sustaining activities, if needed, and engage governmental and private sector resources within and outside of the affected area to meet basic human needs and stabilize the incident, as necessary.

Public Information and Warning: The jurisdictions as a whole demonstrated the ability to deliver coordinated, prompt, reliable and actionable information to the whole community through the use of clear, consistent, and accessible means. Accurate initial information and follow-up on instructions were

made with the formulation of news releases being reviewed from the Joint Information System and simulated briefings conducted at the Ogle County EMA. Alert and notification of the public and media was completed in a timely manner by simulated means of sounding of sirens, Emergency Alert System messaging, warning in state parks, news releases and media briefings. The simulated release of information via the aforementioned public information modes were consistent with protective action decisions and contained applicable and specific instructions relative to those decisions.

Environmental Response/Health and Safety: Appropriate measures were taken to ensure the protection of the health and safety of the public and workers, as well as the environment in support of responder operations and the affected communities. The availability of guidance and resources to address hazardous radiological materials was integrated in support of responder operations and the affected communities. State Liaisons, Ogle County EOC, and Winnebago County EOC staff communicated well with the State Emergency Operations Center to ensure that state Protective Action Recommendations and county Protective Action Decisions and responses were coordinated properly. Leadership identified, assessed, and mitigated worker health and safety hazards and disseminated health and safety guidance and resources to responders in accordance with the scenario, plans and procedures, and the extent-of-play agreements.

On-Scene Security and Protection: State and local law enforcement agencies demonstrated the capability to ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for response personnel who could have been directed to engage in lifesaving and life-sustaining operations. The implementation of traffic and access control was appropriately assessed and coordinated in a timely manner. On-scene security at EOCs, schools, reception centers and other facilities would have met protection requirements and eliminated or mitigated the risk of damage to persons, property, and the environment.

Critical Transportation: Officials demonstrated the capability to provide infrastructure access and accessible transportation services for response priority objectives, including the evacuation of people and animals and the delivery of vital response personnel, equipment, and services into the affected areas. School officials effectively demonstrated the ability to implement protective actions for affected local schools.

Mass Care Services: Congregate care center staff demonstrated the ability to provide life-sustaining services to affected populations with a focus on family reunification, feeding and sheltering. The American Red Cross, which manages all shelter operations under the REP Program, would demonstrate the ability to provide resources, services and accommodations consistent with planning guidelines. They also would be knowledgeable of the process, and how to determine whether evacuees had been monitored for contamination and determined to be acceptable before entering congregate care facilities.

Operational Communications: Ogle County and Winnebago County requested and received Actual Incident Credit for Evaluation Criterion 1.d.1, which is the key criterion for applicable organizations and functional entities. Each applicable organization and location demonstrated the capacity for timely communications in support of security, situational awareness, and operations by primary and backup means, the ability to communicate with both the emergency response community and the affected populations, and to establish interoperable communications between federal, state, and local response groups and locations and between affected communities in the impact area.

Infrastructure Systems: Evaluation Criterion 3.d.2, which is the key criterion for this capability, was assessed pursuant to the State of Illinois, Ogle County, and Winnebago County capabilities to address impediments to mass evacuation. Ogle County and Winnebago County demonstrated the capability to

address roadway impediments due to road blockages and other events that impair/impede safe evacuation of the public.

3.2 EXERCISE EVALUATION AND RESULTS

This section contains the results and findings of the evaluation of all jurisdictions and functional entities that participated in the March 23, 2021 Partial-Participation Plume Exposure Pathway Exercise and out-of-sequence interviews and demonstrations.

Each jurisdiction and functional entity were evaluated based on their demonstration of Core Capabilities and their equivalent Radiological Emergency Preparedness Evaluation Criteria, as delineated in the Federal Emergency Management Agency Radiological Emergency Preparedness Program Manual dated January 2016. Exercise criteria are listed by number, and the demonstration status of those criteria are indicated by the use of the following terms:

1. M: Met (no unresolved Level 1 or Level 2 findings were assessed, and there were no unresolved findings from prior exercises)
2. L1: Level 1 Finding was assessed
3. L2: Level 2 Finding was assessed or an unresolved Level 2 finding(s) from a prior exercise
4. P: Plan Issue was assessed
5. NS: Not Selected (the Criterion was not selected for demonstration)
6. C: Credit (Actual Incident Credit Received)
7. PC: Partial Credit (Partial Actual Incident Credit Received)

Table 3.2.1 – Summary of Exercise Evaluation – State of Illinois

DATE: March 23, 2023 SITE: Byron Station M: Met L1: Level 1 Finding L2: Level 2 Finding NS: Not Selected C: Credit (Actual Incident) PC: Partial Credit (Actual Incident)	CRITERION	ISP District 16 – DCO Briefing	ISP District 16 – TACP
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1		
Equipment and Supplies to Support Operations	1e1		
Protective Action Decision-Making			
EW Exposure Control Decisions	2a1		
PARs	2b1		
PADs	2b2		
PADs for Disabled/Functional Needs	2c1		
Ingestion PADs	2d1		
RRR Decisions	2e1		
Protective Action Implementation			
EW Exposure Control Implementation	3a1	M	M
KI Public/Institutionalized	3b1		
PAD Implementation Disabled/Functional Needs	3c1		
PAD Implementation Schools	3c2		
TACP Establishment	3d1		M
Impediments	3d2		
Implement Ingestion PADs	3e1		
Ingestion Pathway Decisions	3e2		
Implementation of RRR Decisions	3f1		
Field Measurement and Analysis			
RESERVED	4a1		
Field Team Management	4a2		
Field Team Operations	4a3		
Field Team Sampling	4b1		
Laboratory Operations	4c1		
Emergency Notification and Public Info			
Initial Alert & Notification	5a1		
RESERVED	5a2		
Backup Alert & Notification	5a3		
Exception Area Alerting	5a4		
Subsequent Information & Instructions	5b1		
Support Operations and Facilities			
Reception Center Operations	6a1		
EW Monitoring & Decontamination	6b1		
Congregate Care	6c1		
Contaminated Injured	6d1		

Table 3.2.2 – Summary of Exercise Evaluation – Ogle County

DATE: March 23, 2021 SITE: Byron Station M: Met L1: Level 1 Finding L2: Level 2 Finding C: Credit (Actual Incident) ND: Not Demonstrated PC: Partial Credit (Actual Incident)	CRITERION	EAS Broadcast Station - WHRL/WYOT	Ogle County Emergency Operations Center	Ogle County Sheriff's Office - DCO	Ogle County Sheriff's Office - TACP	Byron Police Department – DCO	Byron Police Department - TACP
Emergency Operations Management							
Mobilization	1a1		C				
Facilities	1b1						
Direction and Control	1c1		C				
Communications Equipment	1d1		C				
Equipment and Supplies to Support Operations	1e1		C				
Protective Action Decision-Making							
EW Exposure Control Decisions	2a1						
PARs	2b1						
PADs	2b2		M				
PADs for Disabled/Functional Needs	2c1		C				
Ingestion PADs	2d1						
RRR Decisions	2e1						
Protective Action Implementation							
EW Exposure Control Implementation	3a1		M	M	M	M	M
KI Public/Institutionalized	3b1		M				
PAD Implementation Disabled/Functional Needs	3c1						
PAD Implementation Schools	3c2		M				
TACP Establishment	3d1		M		M		M
Impediments	3d2		M				
Implement Ingestion PADs	3e1						
Ingestion Pathway Decisions	3e2						
Implementation of RRR Decisions	3f1						
Field Measurement and Analysis							
RESERVED	4a1						
Field Team Management	4a2						
Field Team Operations	4a3						
Field Team Sampling	4b1						
Laboratory Operations	4c1						
Emergency Notification and Public Info							
Initial Alert & Notification	5a1	M	M				
RESERVED	5a2						
Backup Alert & Notification	5a3						
Exception Area Alerting	5a4						
Subsequent Information & Instructions	5b1		PC				
Support Operations and Facilities							
Reception Center Operations	6a1						
EW Monitoring & Decontamination	6b1						
Congregate Care	6c1						
Contaminated Injured	6d1						

Table 3.2.3 – Summary of Exercise Evaluation – Winnebago County

DATE: March 23, 2021 SITE: Byron Station M: Met L1: Level 1 Finding L2: Level 2 Finding C: Credit (Actual Incident) ND: Not Demonstrated PC: Partial Credit (Actual Incident)	CRITERION	Winnebago County Emergency Operations Center	Winnebago County Sheriff's Department - DCO	Winnebago County Sheriff's Department - TACP
Emergency Operations Management				
Mobilization	1a1	C		
Facilities	1b1			
Direction and Control	1c1	C		
Communications Equipment	1d1	C		
Equipment and Supplies to Support Operations	1e1	C		
Protective Action Decision-Making				
EW Exposure Control Decisions	2a1			
PARs	2b1			
PADs	2b2			
PADs for Disabled/Functional Needs	2c1			
Ingestion PADs	2d1			
RRR Decisions	2e1			
Protective Action Implementation				
EW Exposure Control Implementation	3a1	M	M	M
KI Public/Institutionalized	3b1	M		
PAD Implementation Disabled/Functional Needs	3c1			
PAD Implementation Schools	3c2			
TACP Establishment	3d1	M		M
Impediments	3d2	M		
Implement Ingestion PADs	3e1			
Ingestion Pathway Decisions	3e2			
Implementation of RRR Decisions	3f1			
Field Measurement and Analysis				
RESERVED	4a1			
Field Team Management	4a2			
Field Team Operations	4a3			
Field Team Sampling	4b1			
Laboratory Operations	4c1			
Emergency Notification and Public Info				
Initial Alert & Notification	5a1	M		
RESERVED	5a2			
Backup Alert & Notification	5a3			
Exception Area Alerting	5a4			
Subsequent Information & Instructions	5b1	PC		
Support Operations and Facilities				
Reception Center Operations	6a1			
EW Monitoring & Decontamination	6b1			
Congregate Care	6c1			
Contaminated Injured	6d1			

3.3 JURISDICTIONAL SUMMARY OF EXERCISE EVALUATION RESULTS

The following sections present narrative summaries that describe observations made during the exercise pursuant to the Evaluation Criteria and Core Capabilities demonstrated at each jurisdiction's response locations. Narrative summaries are organized by Jurisdiction, Location, Assessed Core Capability, and the Evaluation Criterion discussed in the Appendix E Extent-of-Play Agreements. The results of the assessments are summarized in Tables 3.2.1, 3.2.2, and 3.2.3.

3.3.1 State of Illinois

3.3.1.1 Illinois State Police District 16 – DCO Briefing

Criterion 3.a.1 – Core Capability: Operational Coordination

Core Capability: Environmental Response/Health and Safety

3.3.1.2 Illinois State Police District 16 - TACP

Criterion 3.a.1 – Core Capability: Environmental Response/Health and Safety

Criterion 3.d.1 – Core Capability: Operational Coordination

Core Capability: Critical Transportation

Core Capability: On-Scene Security and Protection

In summary, the status of DHS/FEMA-evaluated core capabilities and criteria for the State of Illinois is as follows:

- a. Met: All Core Capabilities and Evaluation Criteria identified in the DHS/FEMA-approved extent-of-play agreement.
- b. Level 1 Findings: None
- c. Level 2 Findings: None
- d. Plan Issues: None
- e. Prior Issues – Resolved: NONEone
- f. Prior Issues – Unresolved: NONEone

3.3.2 Risk Jurisdiction – Ogle County

3.3.2.1. Emergency Broadcast System Station – WRHL/WYOT

- Criterion 5.a.1 – Core Capability: Operational Coordination
Core Capability: Public Information and Warning
- Criterion 5.b.1 – Core Capability: Public Information and Warning
Core Capability: Operational Coordination
Core Capability: Operational Communications

3.3.2.2. Emergency Operations Center

- Criterion 2.b.2 – Core Capability: Operational Coordination
Core Capability: Environmental Response/Health and Safety
Core Capability: Operational Communications
Core Capability: Situational Assessment
- Criterion 3.a.1 – Core Capability: Operational Coordination
Core Capability: Environmental Response/Health and Safety
- Criterion 3.b.1 – Core Capability: Operational Coordination
Core Capability: Public Information and Warning
Core Capability: Environmental Response/Health and Safety
Core Capability: Public and Private Services and Resources
- Criterion 3.c.2 – Core Capability: Operational Coordination
Core Capability: Critical Transportation
Core Capability: Environmental Response/Health and Safety
- Criterion 3.d.1 – Core Capability: Operational Coordination
Core Capability: Critical Transportation
Core Capability: On-Scene Security and Protection
- Criterion 3.d.2 – Core Capability: Operational Coordination
Core Capability: Critical Transportation
Core Capability: Critical Infrastructure Systems

3.3.2.3 Byron Police Department– DCO Briefing

- Criterion 3.a.1 – Core Capability: Operational Coordination
Core Capability: Environmental Response/Health and Safety

3.3.2.4 Byron Police Department – TACP

- Criterion 3.a.1 – Core Capability: Operational Coordination
Core Capability: Environmental Response/Health and Safety
- Criterion 3.d.1 – Core Capability: Operational Coordination
Core Capability: Critical Transportation
Core Capability: On-Scene Security and Protection

In summary, the status of DHS/FEMA-evaluated core capabilities and criteria for the County of Ogle is as follows:

- a. Met: All Core Capabilities and Evaluation Criteria identified in the DHS/FEMA-approved extent-of-play agreement.
- b. Level 1 Findings: None

- c. Level 2 Findings: None
- d. Plan Issues: None
- e. Prior Issues – Resolved: NONE
- f. Prior Issues – Unresolved: NONE

3.3.3 Risk Jurisdiction – Winnebago County

3.3.3.1. Emergency Operations Center

- Criterion 3.a.1 – Core Capability: Operational Coordination
Core Capability: Environmental Response/Health and Safety
- Criterion 3.b.1 – Core Capability: Operational Coordination
Core Capability: Public Information and Warning
Core Capability: Environmental Response/Health and Safety
Core Capability: Public and Private Services and Resources
- Criterion 3.d.1 – Core Capability: Operational Coordination
Core Capability: Critical Transportation
Core Capability: On-Scene Security and Protection
- Criterion 3.d.2 – Core Capability: Operational Coordination
Core Capability: Critical Transportation
Core Capability: Critical Infrastructure Systems

In summary, the status of DHS/FEMA-evaluated core capabilities and criteria for the County of Winnebago is as follows:

- a. Met: All Core Capabilities and Evaluation Criteria identified in the DHS/FEMA-approved extent-of-play agreement.
- b. Level 1 Findings: None
- c. Level 2 Findings: None
- d. Plan Issues: None
- e. Prior Issues – Resolved: None
- f. Prior Issues – Unresolved: None

SECTION 4: Conclusion

The DHS/FEMA evaluation team identified no Findings and no Plan Issues for the State of Illinois during the 2021 Byron Station Exercise. No Findings or Plan Issues were identified for Ogle County or Winnebago County as a result of the exercise. The ongoing COVID-19 Pandemic and other disasters that occurred during 2020-2021 presented the State of Illinois with substantial logistical and communications challenges for simultaneously developing and implementing a successful commercial nuclear power plant exercise. The response to these challenges and the results of the exercise are discussed in Appendix A of this After-Action Report/Improvement Plan.

Based on the results of the exercise, the planning and preparedness for the State of Illinois and affected local jurisdictions provided reasonable assurance that appropriate measures could be taken to protect public health and safety. Therefore, Title 44 CFR Part 350, approval of the offsite radiological emergency response plans and preparedness for the State of Illinois, remains in effect.

APPENDIX A: Improvement Plan

This appendix summarizes the results from the evaluation of all jurisdictions and functional entities that participated in the March 23, 2021, Byron Station, Partial Participation, Plume Exposure Pathway REP Exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Byron Station, recommended corrective actions, and a schedule of corrective actions for the identified primary responsible agency.

The DHS/FEMA evaluation team identified no Level 1 or Level 2 Findings and no Plan Issues for the State of Illinois during the 2021 Byron Station exercise. No Findings or Plan Issues were identified for Ogle County or Winnebago County as a result of the exercise.

The ongoing COVID-19 Pandemic and other disasters that occurred during 2020-2021 presented the State of Illinois with substantial logistical and communications challenges for simultaneously developing and implementing a successful commercial nuclear power plant exercise plan in a combined virtual and physical environment. Travel and social distancing restrictions made it necessary to adopt virtual technologies to conduct the exercise and assess demonstration activities remotely.

Best Practices

The exercise was evaluated virtually using Cisco Webex collaboration software configured by the State of Illinois Emergency Management Agency (EMA), Ogle County, and Winnebago County, in collaboration with DHS/FEMA Region V, to establish channels, with audio/visual, chat, and exercise-related document sharing features.

The use of computer-based audio-visual collaboration software, email, and cellular telephone-facilitated voice and text communications allowed the DHS/FEMA evaluation teams to remotely observe demonstration activities at multiple locations and access exercise documentation in real time.

This exercise also involved extensive approval of REP Actual Incident Credit for documented state and local response to the COVID-19 Pandemic and other declared disasters. The approval of Actual Incident Credit required the Offsite Response Organizations to submit documentation substantiating demonstration capabilities consistent with NUREG-0654 FEMA-REP-1, Rev. 1, and FEMA P-1028 REP Program Manual guidance. Assessment credit was approved for response actions that met REP Program capability targets and provided reasonable assurance for protecting public health and safety.

APPENDIX B: Exercise Timeline

The Byron Station Radiological Emergency Preparedness Exercise was conducted via Out-of-Sequence events by means of separate guided discussions and interviews. The format in which the criterion demonstrations took place did not include the use of an Exercise Timeline.

APPENDIX C: Exercise Evaluation Team

EXERCISE DATE: March 23, 2021

SITE: Byron Station

Exercise Management	Name	Agency/ Organization
Chair, Regional Assistance Committee	Sean O’Leary	DHS/FEMA
Exercise Director	Stephen Tulley	DHS/FEMA
Illinois Site Specialist	David Persaud	DHS/FEMA
Team Leader – Ogle County	David Persaud	DHS/FEMA
Team Leader – Winnebago County	Brian Reinhart	DHS/FEMA
Contractor Evaluator Support - Scenario Review	John Wills	ICF

Evaluated Off-Site Response Organizations/Locations	Evaluator	Agency/ Organization
State of Illinois		
Illinois State Police District 16 -TACP - DCO Briefing	David Persaud	DHS/FEMA
Ogle County		
Emergency Operations Center	Brian Reinhart	DHS/FEMA
Emergency Operations Center	David Persaud	DHS/FEMA
Emergency Broadcast System Station – WRHL/WYOT	David Persaud	DHS/FEMA
Sheriff’s Department - TACP - DCO Briefing	David Persaud	DHS/FEMA
Winnebago County		
Emergency Operations Center	David Persaud	DHS/FEMA
Emergency Operations Center	Brian Reinhart	DHS/FEMA
Sheriff’s Department - TACP - DCO Briefing	David Persaud	DHS/FEMA

APPENDIX D: Acronyms and Abbreviations

ACRONYM	DESCRIPTION
AAR	After Action Report
ACD	Animal Control Division
AMT	Advanced Medical Transport
CFR	Code of Federal Regulations
cpm	counts per minute
CST	Central Standard Time
DCO	Dosimetry Control Officer
DLR	Dosimeter of Legal Record
DRD	Direct-Reading Dosimeter
EBS	Emergency Broadcast System
ECL	Emergency Classification Level
EMC	Emergency Management Coordinator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPZ	Emergency Planning Zone
ESDA	Emergency Services and Disaster Agency
ESDAC	Emergency Services and Disaster Agency Coordinator
ESDAD	Emergency Services and Disaster Agency Director
EW	Emergency Worker
FEMA	Federal Emergency Management Agency
HAD	Health Department Administrator
HP	Health Physics
IEMA	Illinois Emergency Management Agency
IL	Illinois
IPAWS	Integrated Public Alert and Warning System
IPRA	Illinois Plan for Radiological Accidents
ISP	Illinois State Police
IWP	Initial Warning Point
JIC	Joint Information Center
KI	potassium iodide
NARS	Nuclear Accident Reporting System
ND	Not Demonstrated
NIMS	National Incident Management System
NOUE	Notice of Unusual Event
NRC	Nuclear Regulatory Commission
NS	Not Selected
ORO	Off-Site Response Organization
OCEMD	Ogle County Emergency Management Director
OCSO	Ogle County Sheriff's Office

ACRONYM	DESCRIPTION
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PDAFN	persons with and access/functional needs
PHA	Public Health Administrator
PIO	Public Information Officer
PPE	Personal Protective Equipment
RAC	Regional Assistance Committee
RASCAL	Radiological Assessment System for Consequence Analysis
REA	Radiological Emergency Area
REAC	Radiological Emergency Assessment Center
REAC/TS	Radiation Emergency Assistance Center/Training Site
REP	Radiological Emergency Preparedness
RRG	Radiological Response Group
RRR	Return, Reentry, Relocation
RT	Radiation Technologist
SEOC	State of Illinois Emergency Operations Center
SIREN	State of Illinois Rapid Electronic Notification
TAC	Traffic and Access Control
TACP	Traffic and Access Control Post
TSC	Technical Support Center
UAC	Unified Area Command
URI	Unified RASCAL Interface
WCESDA	Winnebago County Emergency and Disaster Services Agency
WCHD	Winnebago County Highway Department
WCSO	Winnebago County Sheriff's Department

APPENDIX E: Extent-of-Play Agreements

STATE OF ILLINOIS EXTENT OF PLAY AGREEMENT

FOR THE BYRON STATION EXERCISE

March 23, 2021

Criteria that can be re-demonstrated immediately for credit, at the discretion of the evaluator, include the following: 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 4.a.3, 4.b.1, 4.c.1, 6.a.1, 6.b.1, 6.c.1 and 6.d.1. Criteria that may be re-demonstrated, as approved on a case-by-case basis by the Chair of the Regional Assistance Committee, include the following: 2.a.1, 2.b.1, 2.b.2, 3.d.2, 5.a.1 and 5.b.1.

NOTE: If the exercise scenario, or related exercise play, does not prompt specific criteria-related actions, individual criteria may be addressed through a functional interview or alternative scenario-driven task demonstration. When utilized, this process will be done in a manner not to disrupt or interfere with normal exercise play.

Because of national and state-wide restrictions on gatherings, it **will be necessary to conduct the evaluation remotely via a State-provided, web-based platform. **Related WebEx access email invitations will be sent to FEMA, IEMA and the participating counties.****

EVALUATION AREA 1 - EMERGENCY OPERATIONS MANAGEMENT

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

The State Emergency Operations Center (SEOC) and the Radiological Emergency Assessment Center (REAC) will not be activated, but will be established as a SIMCELL to support county exercise play.

IEMA personnel will be prepositioned in the local area and dispatched to the County EOCs, Emergency Operations Facility (EOF), Technical Support Center (TSC) and the JIC (in Warrenville and Springfield) to support exercise play as necessary, but will not be evaluated. The JIC will not be evaluated for this exercise.

The prepositioned State staff will begin exercise play no earlier than the Alert.

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

This criterion will not be demonstrated during this exercise.

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

This criterion will not be evaluated during this exercise.

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

This criterion will not be evaluated during this exercise.

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

The State of Illinois will use equipment, maps and displays to support emergency operations, but will not be evaluated. Dosimetry Control Officer (DCO) logs will be available from an IEMA Radiological Advisors in the Ogle County EOC.

A DCO briefing/Traffic and Access Control (TAC) interview will be conducted by Illinois State Police District 16 during an out-of-sequence interview on **Thursday, March 25th at 9:30 AM (tentative) at District 16 Headquarters in Pecatonica, ~~or~~ but conducted remotely via Webex.** During this event, the availability of dosimetry **may** be demonstrated. No more than 10% of ISP District 1 dosimetry kits will be inspected during the interview to confirm serial numbers.

EVALUATION AREA 2 - PROTECTIVE ACTION DECISION MAKING

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

This criterion will not be evaluated during this exercise.

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

This criterion will not be evaluated during this exercise.

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

This criterion will not be evaluated during this exercise but may be provided via SIMCELL to support county-level exercise play.

Criterion 2.c.1: Protective action decisions are made, as appropriate, for groups of people with disabilities and those with access/functional needs.

This criterion will not be evaluated during this exercise.

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

This criterion will not be demonstrated during this exercise.

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

This criterion will not be demonstrated during this exercise.

EVALUATION AREA 3 - PROTECTIVE ACTION IMPLEMENTATION

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

A DCO briefing/Traffic and Access Control (TAC) interview will be conducted by Illinois State Police District 16 during an out-of-sequence interview on **Thursday, March 25th at 9:30 AM (tentative) at District 16 Headquarters in Pecatonica, but conducted remotely via Webex.**

Criterion 3.b.1: KI and appropriate instructions are available in case a decision to recommend use of KI is made. Appropriate record keeping of the administration of KI for institutionalized individuals is maintained.

The State of Illinois does not currently recommend the use of KI by the general public. However, if necessary, to support exercise play the State will address the general public who has KI regarding the proper time to consider taking KI through the JIC.

Criterion 3.c.1: Protective action decisions are implemented for people with disabilities and those with access/functional needs other than schools within areas subject to protective actions.

This criterion does not apply to the State of Illinois.

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

This criterion does not apply to the State of Illinois.

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

A DCO briefing/Traffic and Access Control (TAC) interview will be conducted by Illinois State Police District 16 during an out-of-sequence interview on **Thursday, March 25th at 9:30 AM (tentative) at District 16 Headquarters in Pecatonica, ~~or~~ but conducted remotely via Webex.**

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

This criterion will not be demonstrated during this exercise.

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

This criterion will not be demonstrated during this exercise.

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

This criterion will not be demonstrated during this exercise.

Criterion 3.f.1: Decisions regarding controlled re-entry, relocation, and return of individuals during the post-plume phase are coordinated with appropriate organizations and implemented

This criterion will not be demonstrated during this exercise.

EVALUATION AREA 4 - FIELD MEASUREMENT AND ANALYSIS

Criterion 4.a.1: [RESERVED]

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

This criterion will not be evaluated during this exercise.

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

This criterion will not be evaluated during this exercise.

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

This criterion will not be demonstrated during this exercise.

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

This criterion will not be demonstrated.

EVALUATION AREA 5 - EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

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

The State's role in demonstrating this criterion is limited to transmitting the State's protective action recommendation (PAR) to Ogle County officials and monitoring the instructional messages provided to the public by Ogle County to support exercise play. This monitoring will be accomplished by IEMA representatives in the Ogle County EOC, **or participating remotely**.

Criterion 5.a.2: [RESERVED]

Criterion 5.a.3: Backup alert and notification of the public is completed within a reasonable time following the detection by the ORO of a failure of the primary alert and notification system.

This criterion does not apply to the State of Illinois.

Criterion 5.a.4: Activities associated with FEMA-approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation.

This criterion does not apply to the State of Illinois.

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

This criterion will not be evaluated during this exercise.

EVALUATION AREA 6 - SUPPORT OPERATION/FACILITIES

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

This criterion will not be demonstrated during this exercise.

Criterion 6.b.1: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles.

This criterion will not be demonstrated during this exercise.

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

This criterion will not be demonstrated during this exercise.

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

The MS-1 demonstration for OSF St. Anthony is currently postponed until such time that hospital staff can participate safely after Covid surge declines adequately for a non-emergency evaluation.

OGLE COUNTY EXTENT OF PLAY AGREEMENT

FOR THE BYRON STATION EXERCISE March 23, 2021

Criteria that can be re-demonstrated immediately for credit, at the discretion of the evaluator, include the following: 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 4.a.3, 4.b.1, 4.c.1, 6.a.1, 6.b.1, 6.c.1 and 6.d.1. Criteria that may be re-demonstrated, as approved on a case-by-case basis by the Chair of the Regional Assistance Committee, include the following: 2.a.1, 2.b.1, 2.b.2, 3.d.2, 5.a.1 and 5.b.1.

NOTE: Exercise credit for real-world state response was requested of, and granted by, FEMA through a letter to the RAC Chair, dated February 1, 2021. Criterion where full or partial credit was given is noted below.

Actual incident response credit was adequate to replace participation requirements for the traditional Plume Exposure Pathway exercise currently scheduled for Tuesday, March 23rd. Ogle County may adopt the same date for out-of-sequence activities that will occur independent of other activities occurring on-site.

Because of national and state-wide restrictions on gatherings, it will be necessary to conduct the evaluation remotely via a State-provided, web-based platform. Related WebEx access email invitations will be sent to FEMA, IEMA and the participating counties.

EVALUATION AREA 1 - EMERGENCY OPERATIONS MANAGEMENT

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

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

This criterion will not be evaluated for this exercise, it was last done in 2019.

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

The DCO briefing for the Ogle County deputy demonstrating traffic and access control will be conducted at the Ogle County EOC on March 23rd, 2021 (**confirmed**) out of sequence to, but not interfering with, exercise play.

The DCO briefing for the Byron Police officer demonstrating traffic and access control will be conducted on **Wednesday, March 24th at 9:30 am (confirmed)** ~~at the Byron Police Department,~~ ~~or~~ remotely via State of Illinois Webex ~~if necessary~~.

EVALUATION AREA 2 - PROTECTIVE ACTION DECISION MAKING

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

This criterion does not apply to Ogle County.

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

This criterion does not apply to Ogle County.

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

The State of Illinois will make protective action recommendations to Ogle County officials in the Ogle County EOC. The Ogle County officials will make the final decision regarding what protective actions will be recommended to the public. This will be demonstrated remotely through a discussion with Ogle County EOC participants (remotely). A NARS message and mapping products will be injected by the state controller to drive discussion.

Criterion 2.c.1: Protective action decisions are made, as appropriate, for groups of people with disabilities and those with access/functional needs.

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

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

This criterion does not apply to Ogle County.

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

This criterion will not be demonstrated during this exercise.

EVALUATION AREA 3 - PROTECTIVE ACTION IMPLEMENTATION

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

Ogle County will demonstrate this criterion by close coordination with the IEMA Radiological Advisor and timely dissemination and exchange of information within the County Dosimetry Control Officer network. Exercise messages will be injected which will ensure the opportunity to demonstrate this criterion in the Ogle County EOC.

This criterion will also be demonstrated during the traffic and access control (TAC) demonstrations and school interviews:

The DCO briefing for the Ogle County deputy demonstrating traffic and access control will be conducted at the Ogle County EOC on March 23rd out of sequence to, but not interfering with, exercise play.

The DCO briefing for the Byron Police officer demonstrating traffic and access control will be conducted on Wednesday, March 24th at 9:30 am (**confirmed**) ~~at the Byron Police Department or~~ remotely via State of Illinois Webex.

Criterion 3.b.1: KI and appropriate instructions are available in case a decision to recommend use of KI is made. Appropriate record keeping of the administration of KI for institutionalized individuals is maintained.

When notified by the State of Illinois exercise controller to distribute and administer KI, Ogle County officials will discuss the issuance of KI and immobile populations, as a voluntary measure, and will discuss how they would notify the municipalities of the State's recommendation. This will be conducted remotely via Webex.

Criterion 3.c.1: Protective action decisions are implemented for people with disabilities and those with access/functional needs other than schools within areas subject to protective actions.

This criterion will not be demonstrated for this exercise.

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

Ogle County officials will demonstrate this capability through the simulated implementation of the appropriate procedures in the Ogle county EOC. The EPZ schools and transportation providers will **NOT** be contacted during the exercise but **may be discussed by participants**.

~~The roles of the superintendent, principal, transportation coordinator, bus driver, maintenance supervisor and DCO will be represented at the interview. Teacher participation is encouraged but not specifically required.~~

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

Partial real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion may be partially demonstrated to meet exercise requirements, but radiological plume and emergency worker exposure control will be evaluated.

Coordination between Ogle County agencies designated to provide traffic and access control will be exhibited in the Ogle County EOC **remotely via Webex on March 23rd**. ~~The DCO briefing for the Ogle County deputy demonstrating traffic and access control will be conducted at the Ogle County EOC on October 29th out of sequence to, but not interfering with, exercise play.~~ A deputy will not be asked to drive to the selected post location for the demonstration, but will provide adequate information to the evaluator to describe the process of staffing the selected post. The post will be selected by the State exercise controller. The staffing of the remaining posts will be simulated.

A traffic & access control briefing will be demonstrated by an officer at the Byron Police Department ~~(or remotely via State of Illinois Webex if necessary)~~ on Wednesday, March 24th at 9:30 am (**confirmed**). Any traffic and access control assignments will be simulated and not require the officer to drive to a location.

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

The Ogle County EOC staff will demonstrate the capability to identify and take appropriate actions concerning impediments to evacuation. A message and map will be injected remotely by the

Controller that will drive this demonstration. County personnel will deal with the impediment by identifying the equipment needed, discussing its estimated time of arrival, etc. Actual contacts with resource providers will be made and logged. The impediment information will also be coordinated into public messaging (i.e., via media briefing, notifying the JIC, etc.) to communicate alternative routes to potential evacuees.

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

This criterion does not apply to Ogle County.

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

This criterion does not apply to Ogle County.

Criterion 3.f.1: Decisions regarding controlled re-entry, relocation and return of individuals during the post-plume phase are coordinated with appropriate organizations and implemented.

This criterion will not be demonstrated this exercise.

EVALUATION AREA 4 - FIELD MEASUREMENT AND ANALYSIS

This evaluation area does not apply to Ogle County.

EVALUATION AREA 5 - EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

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

Ogle County will demonstrate the capability to provide both an alert signal and an instructional message to populated areas throughout the 10-mile plume pathway EPZ in a timely manner after their decision to activate the alert and notification system to implement protective action decisions (PAD).

This capability will be demonstrated through the discussion of the Byron Station EPZ Prompt Notification System as defined in IPRA-Byron remotely between a county dispatcher and EOC personnel. The Prompt Notification System (outdoor warning sirens) will not be activated during the exercise.

The ability to provide instructions to the public will be demonstrated interview of the local radio station (WRHL) and a joint discussion with county personnel of the procedures for public notification.

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Criterion 5.a.2: [RESERVED]

Criterion 5.a.3: Backup alert and notification of the public is completed within a reasonable time following the detection by the ORO of a failure of the primary alert and notification system.

This criterion will not be demonstrated for this exercise.

Criterion 5.a.4: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation.

This criterion does not apply to Ogle County.

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

Partial real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion may be partially demonstrated to meet exercise requirements, however, disclosure and explanation of incident ECLs, and dissemination of radiological emergency information via the media, including identified protective action areas will be demonstrated.

EVALUATION AREA 6 - SUPPORT OPERATION/FACILITIES

This evaluation area does not apply to Ogle County.

WINNEBAGO COUNTY EXTENT OF PLAY AGREEMENT

FOR THE BYRON STATION EXERCISE March 23, 2021

Criteria that can be re-demonstrated immediately for credit, at the discretion of the evaluator, include the following: 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 4.a.3, 4.b.1, 4.c.1, 6.a.1, 6.b.1, 6.c.1 and 6.d.1. Criteria that may be re-demonstrated, as approved on a case-by-case basis by the Chair of the Regional Assistance Committee, include the following: 2.a.1, 2.b.1, 2.b.2, 3.d.2, 5.a.1 and 5.b.1.

NOTE: Exercise credit for real-world state response was requested of, and granted by, FEMA through a letter to the RAC Chair, dated February 1, 2021. Criterion where full or partial credit was given is noted below.

Actual incident response credit was adequate to replace participation requirements for the traditional Plume Exposure Pathway exercise currently scheduled for Tuesday, March 23rd. Ogle County may adopt the same date for out-of-sequence activities that will occur independent of other activities occurring on-site.

Because of national and state-wide restrictions on gatherings, it will be necessary to conduct the evaluation remotely via a State-provided, web-based platform. Related WebEx access email invitations will be sent to FEMA, IEMA and the participating counties.

EVALUATION AREA 1 - EMERGENCY OPERATIONS MANAGEMENT

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

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

This criterion will be not demonstrated during this exercise.

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

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

Full real-world Covid/Civil Unrest response credit was granted by FEMA for this criterion (*see RAC Chair letter dated February 1, 2021*). As such, this criterion will not be evaluated or demonstrated, but portions may be conducted (only) to support other evaluated exercise criterion.

EVALUATION AREA 2 - PROTECTIVE ACTION DECISION MAKING

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

This criterion does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County. Ogle County is solely responsible for this criterion.

Criterion 2.c.1: Protective action decisions are made, as appropriate, for groups of people with disabilities and those with access/functional needs.

This criterion does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County. This function is the responsibility of Ogle County.

EVALUATION AREA 3 - PROTECTIVE ACTION IMPLEMENTATION

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

This criterion will be demonstrated remotely, via Webex, by participants from Winnebago County. An Emergency Worker dosimetry briefing will be conducted by county participants and will be available to answer follow-up questions.

This criterion will also be demonstrated remotely during the traffic and access control demonstration. The Sheriff's deputy will obtain dosimetry from the DCO in the County EOC. The DCO briefing for the deputy demonstrating traffic and access control will be conducted at the County EOC.

Criterion 3.b.1: KI and appropriate instructions are available in case a decision to recommend use of KI is made. Appropriate record keeping of the administration of KI for institutionalized individuals is maintained

When remotely notified by the State of Illinois controller, Winnebago County officials will remotely discuss the issuance of KI to immobile populations, as a voluntary measure.

Criterion 3.c.1: Protective action decisions are implemented for people with disabilities and those with access/functional needs other than schools within areas subject to protective actions.

This criterion does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County.

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

Coordination between Winnebago County and Ogle County will be discussed remotely, utilizing a map provided by the state controller, and with equipment and TAC guides used in-person by participating personnel. Discussions may include TAC post assignment(s), coordination with Ogle County and will include the briefing on one deputy.

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

The Winnebago County EOC staff will discuss the capability to identify and take appropriate actions concerning impediments to evacuation. A message will be injected remotely by the Controller that will drive this demonstration. County personnel will ~~deal~~ discuss the impediment by identifying the equipment needed, discussing its estimated time of arrival, etc. Actual contacts with resource providers will not be made or logged.

It will also be discussed how the impediment information would be coordinated into public messaging (i.e., via media briefing, coordination with Ogle County, notifying the JIC, etc.) to communicate alternative routes to potential evacuees.

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

This criterion does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County.

EVALUATION AREA 4 - FIELD MEASUREMENT AND ANALYSIS

This evaluation area does not apply to Winnebago County.

EVALUATION AREA 5 - EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

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

This criterion does not apply to Winnebago County. This function is the responsibility of Ogle County.

Criterion 5.a.2: [RESERVED]

Criterion 5.a.3: Backup alert and notification of the public is completed within a reasonable time following the detection by the ORO of a failure of the primary alert and notification system.

This criterion does not apply to Winnebago County.

Criterion 5.a.4: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation.

This criteria does not apply to Winnebago County.

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

This criterion does not apply to Winnebago County. This function is the responsibility of Ogle County.

EVALUATION AREA 6 - SUPPORT OPERATION/FACILITIES

This evaluation area does not apply to Winnebago County.

APPENDIX F: Scenario Timeline

The Byron Station Radiological Emergency Preparedness Exercise was conducted via Out-of-Sequence events by means of separate guided discussions and interviews. The format in which the criterion demonstrations took place did not include the use of a Scenario Timeline.