



Quad Cities Generating Station After Action Report/ Improvement Plan

Exercise Date – December 4, 2018

Radiological Emergency Preparedness (REP) Program



Published May 6, 2019

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After Action Report/Improvement Plan

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After Action Report / Improvement Plan (AAR/IP)

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EXECUTIVE SUMMARY

On December 4, 2018, the Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) Region VII conducted a biennial Plume exercise for the Quad Cities Generating Station (QCGS).

The 2018 QCGS exercise included Special Observers as part of the Enhanced Exercise Initiative (EEI). See Section 3 of this report for more details on the EEI.

In addition to the December 4, 2018 exercise, Out-Of-Sequence (OOS) demonstrations/drills were conducted with seven of the support entities listed in Section 3.3.3. The purpose of both the exercise and the OOS drills was to assess the level of State and local preparedness in responding to a radiological emergency. The exercise and drills were held in accordance with FEMA's policies and guidance for the exercise of State and local radiological emergency response plans and procedures.

The previous biennial QCGS exercise was conducted on November 16, 2016. The qualifying emergency preparedness exercise was conducted on March 26, 1986.

FEMA wishes to acknowledge the efforts of all who participated in and supported the exercise and drills. Along with the State of Iowa, Scott County and Clinton County participated along with the various State and local organizations. The staff of Exelon Generation should also be commended for their work on the training, scenario development, and exercise preparation.

Protecting the public health and safety is the full-time job of some exercise participants and an additionally assigned responsibility for others. Numerous individuals have willingly sought this responsibility by volunteering to provide vital emergency services to their community. The cooperation and teamwork of all the participants were evident during this exercise. Thanks to all who participated in this community service.

Cooperation and teamwork of all the participants were evident during this exercise. The State of Iowa and local organizations demonstrated knowledge of their emergency response plans and procedures and adequately implemented them.

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This report contains the evaluation of the biennial full-scale exercise, and in summary:

- FEMA did not observe or identify any formal issues or findings.
- There were no open or previous issues to assess during this exercise.
- Through the EEI process, 38 areas for improvement were self-identified.
- Three of the improvement areas were “jointly identified” with FEMA.
(IA-18-QUAD-3a1-01, IA-18-QUAD-1c1-04, and IA-18-QUAD-1c1-07)

The final Protective Action Decision (PAD) during the emergency plume phase was the sheltering in place (simulated) of portions of Clinton and Scott Counties in Iowa. This final PAD directed residents in portions of both Clinton and Scott Counties in Iowa, to shelter in place.

In Clinton County, sub-area 1 (approximately 2 mile radius from the plant) was directed to shelter in place. In Scott County, sub-area 2 (approximately 2 mile radius from the plant) was also directed to shelter in place. Approximately 88 Iowa residents were affected by this shelter in place decision.

A total of 66 jurisdictions, agencies and organizations participated in the plume exercise and out of sequence demonstrations.

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ACRONYMS & ABBREVIATIONS

Acronym	Meaning
AAC	After Action Conference
AAR/IP	After Action Report/Improvement Plan
ARC	American Red Cross
ARES	Amateur Radio Emergency Service
DCO	Dosimetry Control Officer
DHS	Department of Homeland Security
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EEI	Enhanced Exercise Initiative
EM	Emergency Management
EMA	Emergency Management Agency
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
EW	Emergency Worker
EWMDS	Emergency Worker Monitoring and Decontamination Station
EPA	Environmental Protection Agency
FCP	Forward Command Post
FEMA	Federal Emergency Management Agency
FTC	Field Team Coordination
GE	General Emergency
GIS	Geographic Information System
HSEMD	Iowa Homeland Security & Emergency Management Department
IDPH	Iowa Department of Public Health
IP	Improvement Plan
IPAWS	Integrated Public Alert and Warning System
JAM	Joint Adjudication Meeting
JIC	Joint Information Center
KI	Potassium Iodide
NARS	Nuclear Accident Reporting System
NOUE	Notification of Unusual Event
NRC	Nuclear Regulatory Commission
NWS	National Weather Service
OOS	Out of Sequence

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ORO	Off-Site Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIO	Public Information Officer
POC	Point of Contact
PPX	Plume Exercise
QCGS	Quad Cities Generating Station
REP	Radiological Emergency Preparedness
SAE	Site Area Emergency
SNB	Special News Broadcast
SEOC	State Emergency Operations Center
SO	Special Observer
SOP	Standard Operating Procedure
TACP	Traffic and Access Control Point

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Quad Cities Generating Station (QCGS)

Type of Exercise

Plume (PPX)

Exercise Date

December 4, 2018

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

The following jurisdictions and agencies participated in the 2018 QCGS exercise:

State Jurisdictions or Agencies:

Iowa Department of Aging
Iowa Department of Agriculture and Land Stewardship
Iowa Department of Corrections
Iowa Department of Human Services
Iowa Department of Homeland Security and Emergency Management
Iowa Department of Inspections and Appeals
Iowa Department of Natural Resources
Iowa Department of Public Health
Iowa Department of Public Safety
Iowa Department of Transportation
Iowa Governor's Office
Iowa National Guard
Iowa State Patrol
Iowa State University - Environmental Health and Safety
Iowa State University - Extension Service
University of Iowa - State Hygienic Lab

Risk Jurisdictions or Agencies:

City of Clinton Fire Department
City of Clinton Mayor
City of Clinton Police Department
City of Camanche Mayor
Clinton County Area Education Agency
Clinton County Board of Supervisors
Clinton County Department of Human Services
Clinton County Emergency Management Agency
Clinton County Engineer
Clinton County Health Department
Clinton County Information Technology
Clinton County Public Information Officer
Clinton County Secondary Roads Department
Clinton County Sheriff's Office
Scott County Administration Department
Scott County Community Response Team
Scott County Emergency Management Agency
Scott County Health Department
Scott County Human Resources
Scott County Information Technology
Scott County Secondary Roads

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Scott County Sheriff's Office
Scott Emergency Communications Center

School Districts:

Camanche School District
Clinton School District
North Scott School District
Northeast School District
Pleasant Valley School District

Support Organizations or Agencies:

Amateur Radio Emergency Service (ARES)
American Red Cross
Buchanan County Emergency Management
Benton County Emergency Management
Davenport Fire Department
Donahue Volunteer Fire Department
Eldridge Volunteer Fire Department
Eldridge Police Department
Genesis Medical Center – Davenport
Harrison County Emergency Management
Linn County Emergency Management
Long Grove Volunteer Fire Department
Medic EMS – Davenport
Mercy Medical Center – Clinton
Salvation Army

Private Organizations:

Exelon Generation
ICF International (Federal Contractor)

Federal Jurisdictions or Agencies:

Environmental Protection Agency (EPA)
Federal Emergency Management Agency (FEMA) - Region VII
National Weather Service (NWS)
Nuclear Regulatory Commission (NRC)
United States Coast Guard

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

Quad Cities Generating Station's (QCGS) Emergency Plan describes the capability to respond effectively to a radiological emergency at the site, and provides a detailed description of interaction with Federal, State, and local government agencies as well as private organizations. The Emergency Plan provides for continuous emergency preparedness including the conduct of an annual exercise and preparatory drills.

The purpose of the December 4, 2018, exercise was to activate and evaluate portions of the Iowa State Emergency Plan, the Scott and Clinton County emergency plans, and associated implementing procedures, in accordance with 44 CFR 350. Furthermore, these exercises and drills tested the QCGS emergency response community's ability to assess and respond to emergency conditions and coordinate efforts with other agencies for protection of the health and safety of the public. The conduct and evaluation of this exercise provided additional training for emergency response organization personnel and a means to further enhance QCGS's emergency response capability.

The scenario was designed to provide the basis for a simulated radiological accident initiated by a Radiological Plume event at QCGS through which the capabilities and effectiveness of the emergency response plans can be evaluated. The scenario was used by the exercise controllers and evaluators as the control mechanism for the conduct of the exercise.

QCGS Emergency Planning personnel developed the scenario and it was reviewed and approved by FEMA. The scenario, as driven by the QCGS Control Room Simulator and injects, depicted a simulated sequence of events which resulted in escalating conditions of sufficient magnitude to warrant mobilization of State and local agencies to respond to the simulated emergency. Whenever practical, the exercise incorporated provisions for "free play" on the part of the participants.

2.2 Exercise Objectives, Capabilities and Activities

Quad Cities Generating Station (QCGS) exercises and drills are conducted to test and provide the opportunity to evaluate emergency plans, associated implementing procedures, facilities, and equipment. This exercise tested the QCGS offsite response organizations' ability to assess and respond to emergency conditions as well as coordinate efforts with other agencies for protection of the health and safety of the public.

The QCGS Emergency Preparedness Exercise & Drill Program objectives are based on the Federal requirements delineated in 44 CFR 350, as well as on the priorities and procedures detailed in the emergency preparedness plans for the State of Iowa as well as Scott and Clinton Counties. Additional guidance provided in NUREG-0654, NUREG-0696, and NUREG-0737, was used in developing these objectives.

The overall objective of the exercise was to evaluate the integrated capability of a major portion of the basic elements existing within the offsite emergency plans and emergency response organizations. The exercise tested the implementation of the plans and procedures of participating agencies, along with the capability of these agencies to conduct operations in accordance with these plans. This objective is further defined by the criteria evaluated for each participating location.

The exercise included partial participation by the State of Iowa and full participation by Scott and Clinton Counties, as well as other associated offsite response organizations.

A summary of the specific criteria evaluated for each of the participating organizations is listed in Table 3.1.

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2.3 Scenario Summary

The following is the scenario summary provided by Quad Cities Generating Station Emergency Preparedness personnel and approved by Department of Homeland Security/FEMA for use during the exercise:

EXERCISE TIME LINE/SUMMARY (December 4, 2018)

Unit 1 Initial Conditions		Unit 2 Initial Conditions
Unit 1 at full power, on-line for 150 days: <ul style="list-style-type: none"> • RCIC- Day 1 of 14 for drain line repair. • The daily RCS Chemistry Sample Results at 0615 were 0.25 µCi/gm DE I-131. A second sample has been requested. Expect sample results around 08:15 • On Line Risk is Yellow. • 1B Drywell sprays OOS • Protected equipment: U1 HPCI, T-12, RBCCW, and FP Cooling Pumps, 1A Drywell sprays 		Unit 2 is in cold shutdown- Day 5 of forced outage: <ul style="list-style-type: none"> • A U2 Turbine/Generator repairs are on hold waiting parts. • RPV head is tensioned and Drywell is closed out. • 'A' RHR on maintaining 100 to 120 °F reactor water temperature
T=0	0800	Start Scenario Wind direction – from 335 degrees 12 mph, Stability Class E
T+5	0805	Equipment Malfunction <ul style="list-style-type: none"> • 1B Stator Water Cooling Pump trips o QCAN 901-7 B-10 Stator Cooling Water Pump Auto Trip o QCAN 901-7 C-10 Stator Cooling Panel Trouble • Fuel Failure starts to build in Plant Action/response <ul style="list-style-type: none"> • Standby 1A Stator Water Pump auto starts. • Main Steam Line, Off-gas, and DW rad monitors will start to increase.

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T+10	0810	<p>UNUSUAL EVENT, RU3 – Reactor coolant activity greater than Technical Specifications allowable limit.</p> <p>Plant Actions</p> <ul style="list-style-type: none"> Sample results from chemistry indicating Specific activity > 4.0uCi/gm dose equivalent I-131. This is a confirmatory sample result. (T=0 for Unusual Event) (CM-2) <p>ERO Actions</p> <ul style="list-style-type: none"> SM should declare UNUSUAL EVENT (RU3) at ~0825 due to RCS Specific activity > 4.0 uCi/gm Dose equivalent I-131 NARS / ENS notifications occur ERO notified or activated (CM-3) (CM-4) (CM-5) If ERO activated, OSC/TSC/EOF should be staffed within 60 minutes <input type="checkbox"/> If ERO activated, Command and Control transfer will occur
T+15	0815	<p>Equipment Malfunctions</p> <ul style="list-style-type: none"> 'A' Feedwater Flow Element fails downscale <p>ERO Actions</p> <ul style="list-style-type: none"> Crew will switch to Single Element to Restore RWL
T+35	0835	<p>Equipment Malfunctions</p> <ul style="list-style-type: none"> Running Stator water pump will trip. Failure of Group 2 Isolation "A" CRD Pump failure <p>Plant Response/ERO actions</p> <ul style="list-style-type: none"> Auto turbine runback will occur. Crew will manually scram unit. Control Rods will fail to insert on the scram and will not be able to be inserted Crew will take manual actions to close Group 2 isolation valves Crew will attempt to insert the 2 control rods stuck out of the core but will not be successful Crew will have to start "B" train SBTG manually due to Group 2 Failure DW rads to increase due to leakage into the Drywell

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T+45	0845	<p>ALERT, FA1 – ANY Loss or ANY Potential Loss of either Fuel Clad or RCS</p> <p>Plant Actions</p> <ul style="list-style-type: none"> • Drywell radiations levels indicate greater than 100R/hr. (RC5 – Loss of RCS) (T=0 Alert) <p>ERO Actions</p> <ul style="list-style-type: none"> • SM/SED should declare ALERT (FA1) at ~0850 due to Loss of RCS based on Drywell radiation monitor reading > 100R/hr. (RC5) • NARS / ENS notifications occur • ERO notified/activated (CM-3) (CM-4) (CM-5) • OSC/TSC/EOF should be staffed within 60 minutes (if not previously activated) • Command and Control transfer will occur (if not previously activated)
T+70	0910	<p>Equipment Malfunctions</p> <ul style="list-style-type: none"> • Overcurrent on Bus 12 • Loss of 1B Recirc Pump and 1B RFP <p>Plant Response/ERO Actions</p> <ul style="list-style-type: none"> • Control Room or TSC/OSC will dispatch an Equipment Operator and potentially EMD to investigate the 4kv overcurrent.
T+90	0930	<p>Equipment Malfunctions</p> <ul style="list-style-type: none"> • Small break LOCA occurs <p>Plant Response/ERO Actions</p> <ul style="list-style-type: none"> • Drywell pressure and rads continue to increase • “A” Drywell Spray valve 1-1001-26A fails to open at 5 pounds Torus Pressure

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T+100	0940	<p>Equipment Malfunctions</p> <ul style="list-style-type: none"> • 'B' Core Spray Pump Fails to Start on Hi DW pressure • U-1 DG fails to auto or manual start on Hi DW pressure signal <p>Plant Response/ERO Actions</p> <ul style="list-style-type: none"> • Control room or TSC/OSC will dispatch an Equipment Operator and Maintenance to investigate equipment failures. • Mechanical Maintenance will be needed for Unit 1 DG • EMD will be needed for the 1B Core Spray pump breaker.
T+120	1000	<p>SITE AREA EMERGENCY, FS1 – Loss or Potential Loss of ANY two barriers. FC5 and RC5 Drywell Rad Monitors</p> <p>Plant Response/Actions</p> <ul style="list-style-type: none"> • Drywell Radiation exceeds 665 R/hr and peaks at 745 R/hr (T=0 for Site Area Emergency) <p>ERO Actions</p> <ul style="list-style-type: none"> • SED should declare SITE AREA EMERGENCY (FS1) due to Loss of Fuel Clad • (FC5) and Loss of Reactor Coolant System (RC5/RC3) • NARS / ENS notifications occur • Assembly and Accountability should be performed (CM-10) (CM-12)
T+165	1045	<p>Equipment Malfunctions</p> <ul style="list-style-type: none"> • Running TBCCW Pump will trip <p>Plant Response/ERO actions</p> <ul style="list-style-type: none"> • Crew will start the 1B TBCCW pump and dispatch an Equipment Operator to investigate the 1A TBCCW pump trip.

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T+195	1115	<p>GENERAL EMERGENCY, FG1 – Loss of any two barriers AND Loss or Potential Loss of third barrier (FC5, RC5, and CT3.1)</p> <p>Plant Actions</p> <ul style="list-style-type: none"> • Steam leak through the SBT system and out the Chimney will cause the Effluent monitor to rise • DW pressure drops rapidly (T=0 GE CT3.1) • Release in Progress on URI Path L - <RCS><Drywell><Rx Bldg><SBT><Chimney>< Env> o Peak Release – 8.0E+06 uCi/s @ 1130 (IP for RIP in plant) (IP OPS/RP walk down bldg/blow out panels) (IP -People walking through the plume after release) <p>ERO Actions</p> <ul style="list-style-type: none"> • SED should declare GENERAL EMERGENCY (FG1) due to Loss of Fuel Clad, Loss of RCS and Loss Containment • PARs should be developed by the EOF • Evacuate II Sub-areas 1,2,3 • Evacuate Iowa Sub-areas 1.2.4.6 • Field Monitoring Teams should track the radiological plume (CM-16) □ NARS / ENS notifications occur
T+210	>1130	<p>Damage Mitigation</p> <ul style="list-style-type: none"> • “A” DW spray valve 1-1001-26A restored
T+270	1230	<p>Exercise Termination</p>

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SUMMARY OF EXPECTED EALs and PARs

Time	EAL #	Description
0810	RU3	UNUSUAL EVENT RU3 – Reactor coolant activity greater than Technical Specifications allowable limit. Specific activity > 4.0 uCi/gm Dose equivalent I-131
0845 [UE+30]	FA1	ALERT (FA1): ANY Loss or ANY Potential Loss of either Fuel Clad or RCS Loss of RCS based on Drywell radiation monitor reading > 100R/hr. (RC5).
1000 [ALERT+75]	FS1	SITE AREA EMERGENCY FS1 – Loss or Potential Loss of ANY two barriers. FC5 and RC5 Drywell Rad Monitors Loss of the Fuel clad and RCS based on Drywell Radiation exceeding 665 R/hr and peaks at 745 R/hr
1115 [SAE+75]	FG1	GENERAL EMERGENCY, FG1 – Loss of any two barriers AND Loss or Potential Loss of third barrier (FC5, RC5, and CT3.1/2) Loss of the Fuel clad and RCS based on Drywell Radiation exceeding 665 R/hr and an UNPLANNED rapid drop in Drywell pressure following Drywell pressure rise. OR Drywell pressure response not consistent with LOCA conditions. Release in Progress
1230		Anticipated Termination (Based on status of Illinois and Iowa counties)

PARS – Wind from 335 degrees

Time	Event	Release	Affected Counties / Sub-Areas
0810	Unusual Event (RU3)	None	None
0845	Alert (FA1)	None	None
1000	Site Area Emergency (FS1)	None	None
1115	General Emergency (FG1)	Occurring	<u>ILLINOIS (Evacuate):</u> 1, 3 - Rock Island, and 2 - Whiteside <u>IOWA (Evacuate):</u> 1- Clinton, and 2,4,6 - Scott
1230	Anticipated Termination		

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 December 4, 2018, exercise; as well as the seven out-of-sequence drills held before and after the exercise.

The exercise/drills tested the offsite emergency response capabilities of the State and local governments in the 10-mile plume emergency planning zone (EPZ) surrounding the QCGS.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the criteria delineated in FEMA's Radiological Emergency Preparedness Program Manual, dated January 2016.

All noted inadequacies in plans, procedures, and exercise performance identified by FEMA as well as the OROs, were reviewed by FEMA, the State of Iowa, Clinton and Scott Counties, and Exelon Generation during a Joint Adjudication Meeting conducted on December 19, 2018, and were further refined at an After Action Conference conducted on January 16, 2019.

3.2 Summary Results of Exercise Evaluation

The matrix presented in Table 3.2 presents the status of all exercise criteria, which were scheduled for demonstration during this exercise, at all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status of those criteria is indicated by the use of the following letters:

1. M – Met

An observed action, behavior, procedure, and/or practice that met the exercise criteria.

2. L1 – Level 1 Finding

An observed or identified inadequacy of organizational performance in an exercise that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a Nuclear Power Plant (NPP).

3. L2 – Level 2 Finding

An observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.

4. P – Plan Issue

An observed or identified inadequacy in the offsite response organizations' (ORO's) emergency plan/implementing procedures, rather than that of the ORO's performance.

5. J – Jointly Identified Area for Improvement

Although not a formal issue or finding, an area that was identified by both the FEMA evaluation team as well as the ORO, and therefore considered an enhancement opportunity and a successful outcome of the exercise. Those areas with a "J" met the exercise criteria.

6. N - Not Demonstrated

While FEMA evaluated ORO performance against the minimum requirements of the demonstration criteria, exercise participants and Special Observers (at select locations) were empowered through the EEI to critique ORO demonstrations and performance above and beyond the minimum requirements of the program.

These ORO identified items are identified as "opportunities for enhancement" and are considered a successful outcome of the exercise. All ORO opportunities for enhancement are included in the Improvement Plan in Appendix D.

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3.2 Summary of Exercise Evaluation Table

DATE: December 4, 2018 SITE: Quad Cities Generating Station (Iowa) <i>M: Met, 1: Level 1, 2: Level 2, P: Plan Issue, J: Jointly Identified</i>	REP Criteria Number	IA State EOC	IA Dose Assessment	IA Forward Command Post	IA Field Team Coord.	IA Field Team Blue	IA Field Team Green	Clinton County EOC	Scott County EOC
Emergency Operations Management									
Mobilization	1a1	M	M	M	M	M	M	M	M
Facilities	1b1								
Direction & Control	1c1	J		M				M	J
Communications Equipment	1d1	M	M	M	M	M	M	M	M
Equipment and Supplies	1e1	M	M	M	M	M	M	M	M
Protective Action Decision Making									
EW Exposure Control Decisions	2a1		M	M	M			M	M
PARs	2b1		M		M				
PADs for the General Public	2b2	M	M					M	M
PADs for Disabled/Functional Needs	2c1							M	M
Ingestion PADs	2d1								
Relocation, Reentry, and Return Decisions	2e1								
Protective Action Implementation									
EW Exposure Control Implementation	3a1			M	M	M	M	J	M
Implementation of KI Decision for Public/Institutionalized	3b1							M	M
PAD Implementation for Disabled/Functional Needs	3c1								
PAD Implementation for Schools	3c2								
TACP Implementation/Establishment	3d1	M		M				M	M
Impediments to Evacuation	3d2	M		M				M	M
Implementation of Ingestion PADs	3e1								
Ingestion Strategies and Information	3e2								
Implementation of Relocation, Reentry, and Return Decisions	3f1								
Field Measurement and Analysis									
Field Team Management/Coordination	4a2				M				
Field Team Operations (Collection and Sampling)	4a3					M	M		
Ingestion Field Team Measurements and Sampling	4b1								
Laboratory Operations	4c1								
Emergency Notification and Public Info									
Initial Alert and Notification	5a1							M	M
Backup Alert and Notification	5a3								
Exception Area Alerting	5a4								
Subsequent Public Information	5b1	M						M	M
Support Operations/Facilities									
Reception Center Operations	6a1								
EW Monitoring and Decontamination	6b1								
Congregate Care	6c1								
Contaminated Injured Individuals Transport and Medical Treatment	6d1								

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3.2 Continued Summary of Exercise Evaluation Table

DATE: December 4, 2018 SITE: Quad Cities Generating Station (Iowa) <i>M: Met, 1: Level 1, 2: Level 2, P: Plan Issue, J: Jointly Identified</i>	REP Criteria Number	Genesis Medical Ctr - Davenport	Medic EMS - Davenport	Scott Cty Rec Center/EWMDS	Camanche School District	Clinton School District	Northeast School District	Pleasant Valley School District	NWS - Davenport
Emergency Operations Management									
Mobilization	1a1			M					
Facilities	1b1			M					
Direction & Control	1c1			M					
Communications Equipment	1d1			M					
Equipment and Supplies	1e1	M	M	M	M	M	M	M	
Protective Action Decision Making									
EW Exposure Control Decisions	2a1								
PARs	2b1								
PADs for the General Public	2b2								
PADs for Disabled/Functional Needs	2c1								
Ingestion PADs	2d1								
Relocation, Reentry, and Return Decisions	2e1								
Protective Action Implementation									
EW Exposure Control Implementation	3a1	M	M	M	M	M	M	M	
Implementation of KI Decision for Public/Institutionalized	3b1								
PAD Implementation for Disabled/Functional Needs	3c1								
PAD Implementation for Schools	3c2				M	M	M	M	
TACP Implementation/Establishment	3d1								
Impediments to Evacuation	3d2								
Implementation of Ingestion PADs	3e1								
Ingestion Strategies and Information	3e2								
Implementation of Relocation, Reentry, and Return Decisions	3f1								
Field Measurement and Analysis									
Field Team Management/Coordination	4a2								
Field Team Operations (Collection and Sampling)	4a3								
Ingestion Field Team Measurements and Sampling	4b1								
Laboratory Operations	4c1								
Emergency Notification and Public Info									
Initial Alert and Notification	5a1								M
Backup Alert and Notification	5a3								
Exception Area Alerting	5a4								
Subsequent Public Information	5b1								
Support Operations/Facilities									
Reception Center Operations	6a1			M					
EW Monitoring and Decontamination	6b1			M					
Congregate Care	6c1								
Contaminated Injured Individuals Transport and Medical Treatment	6d1	M	M						

3.3 Criteria Evaluation Summaries

3.3.1 Iowa Jurisdictions or Facilities

3.3.1.1 Iowa State Emergency Operations Center (SEOC)

The Iowa State Emergency Operations Center (SEOC), located in Johnston, IA had thirteen (13) State agencies participate in the December 4, 2018, exercise. Excellent leadership and direction and control were observed throughout the exercise. The SEOC staff were very knowledgeable of their duties and responsibilities, and the procedures and checklists they utilized were very well written and organized. The communications and coordination between the different State agencies was very timely and efficient. The Public Information and Public Inquiry staff worked very well together as a team.

The SEOC Executive Decision-Makers determined the appropriate Protective Action Recommendations (PARs) based on the exercise scenario data/conditions provided by the utility. With input and consultation with other State agency officials, PARs were concurred upon, coordinated, and effectively communicated to the appropriate County OROs.

All eight (8) criteria at this location were adequately demonstrated 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.a.1, 1.c.1, 1.d.1, 1.e.1, 2.b.2, 3.d.1, 3.d.2, 5.b.1.
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: 1.c.1 (jointly with FEMA), 1.e.1 (2), 5.b.1

3.3.1.2 Iowa Dose Assessment

The IDPH staff demonstrated excellent ability to monitor plant parameters in real-time and understand the basis for the ECLs declared by the utility. Outstanding coordination and communication between the IDPH and the utility technical liaison also provided quick and accurate information about plant conditions.

The staff also demonstrated excellent proficiency in the use of the URI-RASCAL computer program for dose assessments, and in the ability to develop a technically defensible basis for a PAR that differed from the one developed by the utility (sheltering of two sub-areas vs. the evacuation of four sub-areas within the EPZ).

All six (6) criteria for this function were adequately demonstrated 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.a.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: 1.d.1, 1.e.1, 2.a.1

3.3.1.3 Iowa Forward Command Post

The Iowa Forward Command Post was established at the Iowa State Patrol District 12 headquarters in Stockton, IA. The HSEMD liaison established a bridge line with the other State and local response organizations, and placed it on speakerphone, which greatly enhanced situational awareness for all the other agencies at the FCP. Excellent inter-agency communications and teamwork were demonstrated throughout the exercise.

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All seven (7) criteria for this function were adequately demonstrated 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.a.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 3.a.1, 4.a.3
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.1.4 Iowa Field Team Coordination

The Iowa Field Team Coordination (FTC) function was established within the Forward Command Post at the Iowa State Patrol District 12 headquarters in Stockton, IA. FTC staff demonstrated excellent proficiency with the RadResponder program and only used one event in order to incorporate Illinois field monitoring data. The HSEMD liaison established a bridge line with the other State and local response organizations, and placed it on speakerphone, which greatly enhanced situational awareness for all the other agencies at the FCP. Excellent inter-agency communications and teamwork were demonstrated throughout the exercise.

All seven (7) criteria for this function were adequately demonstrated 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.a.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 3.a.1, 4.a.2
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None

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- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.1.5 Iowa Field Team Blue

Field Team Blues' working knowledge of RadResponder led to very efficient reporting of field measurements and sample results. The use of Virtual Plume and Teletrix meters resulted in more realistic exercise play, and the staff demonstrated great teamwork and familiarity with their procedures and equipment.

All five (5) criteria for this function were adequately demonstrated 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.a.1, 1.d.1, 1.e.1, 3.a.1, 4.a.3
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.16 Iowa Field Team Green

Field Team Green demonstrated excellent contamination control when donning and doffing their protective equipment, and coached each other on proper technique and disposal. They consistently read the plans, procedures and checklists out loud to ensure accuracy and understanding by all team members, and immediately established an alternate means of communication when their primary means of communication failed.

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All five (5) criteria for this function were adequately demonstrated 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.a.1, 1.d.1, 1.e.1, 3.a.1, 4.a.3
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.2 Risk Jurisdictions or Facilities

3.3.2.1 Clinton County Emergency Operations Center (EOC)

Leadership within the Clinton County EOC demonstrated good direction, control, and coordination throughout the exercise, and facilitated excellent discussion among the Policy Group, Operations, and Logistics. The discussions and coordination included the PARs, the potential PADs, and any potential effects on the public and special populations. Within the tight confines of the EOC, the staff maintained an appropriate noise level to allow effective communications and phone calls within each section. The EOC staff were very knowledgeable of their plans and procedures and demonstrated excellent coordination with other jurisdictions and agencies.

All thirteen (13) criteria for this function were adequately demonstrated 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:

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- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 5.a.1, 5.b.1
 - b. LEVEL ONE: None
 - c. LEVEL TWO: None
 - d. PLAN ISSUES: None
 - e. NOT DEMONSTRATED: None
 - f. PRIOR ISSUES - RESOLVED: None
 - g. PRIOR ISSUES - UNRESOLVED: None
 - h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: 1.a.1 (2), 1.c.1 (2), 1.d.1 (3), 1.e.1, 2.a.1, 2.b.1, 3.a.1, (jointly with FEMA) 3.d.1, 5.a.1, 5.b.1

3.3.2.2 Scott County Emergency Operations Center (EOC)

Excellent communications and coordination were demonstrated by the Scott County EOC staff, including the courtesy communications with their neighbor across the river, Rock Island County, Illinois, regarding decisions and the sounding of the sirens. Numerous well-coordinated briefings were conducted with strong direction and control. Each functional area participated in the briefings, and when appropriate, in the discussions regarding PARs and potential PADs. The staff was proactive in their approach, always looking ahead in case the situation escalated in nature, and they worked very well as a team.

All thirteen (13) criteria for this function were adequately demonstrated 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.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 5.a.1, 5.b.1
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

-
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: 1.a.1, 1.c.1 (4) (one jointly with FEMA), 1.d.1 (2), 1.e.1 (3), 2.c.1 (2), 3.a.1, 3.d.2, 5.a.1, 5.b.1 (2)

3.3.3 Support Jurisdictions or Facilities

3.3.3.1 Genesis Medical Center-Davenport *(evaluated out-of-sequence on October 31, 2018)*

The Genesis Medical Center staff worked and communicated well as a team, demonstrating they knew their roles and responsibilities in providing treatment to an injured, contaminated patient. There was good coordination between Genesis Medical Center staff members and the MedicEMS ambulance crew regarding patient transfer. The hospital staff was knowledgeable of their procedures and demonstrated proper contamination control techniques throughout the drill.

All three (3) criteria for this function were adequately demonstrated 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.e.1, 3.a.1, 6.d.1
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.3.2 MedicEMS-Davenport *(evaluated out-of-sequence on October 31, 2018)*

The MedicEMS-Davenport ambulance crew was knowledgeable in their duties, and properly followed their procedures and checklists. They worked well as a team, staying focused on

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medical treatment while demonstrating excellent contamination control procedures from first contact with simulated patient, until transfer to Genesis Medical Center-Davenport Staff.

All three (3) criteria for this function were adequately demonstrated 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.e.1, 3.a.1, 6.d.1
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.3.3 Scott County Reception Center/Emergency Worker Monitoring and Decontamination Station (EWMDS) (*evaluated out-of-sequence on July 25, 2018*)

The Scott County Reception Center/EWMDS was staffed by several agencies, many of them volunteers, but they all came together with a great attitude and worked very well as a team. The layout of the facility and excellent direction and control resulted in a very efficient flow for evacuees and emergency workers through the different stations. The staff was knowledgeable of, and demonstrated, proper contamination control procedures and techniques throughout the drill.

All eight (8) criteria for this function were adequately demonstrated 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.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.a.1, 6.b.1

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- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.3.4 Camanche School District (*evaluated out-of-sequence on October 29, 2018*)

The evaluation for three school districts in Clinton County (Camanche, Clinton, and Northeast) were all conducted at the same time, via interview, at the Clinton County EOC. During the evaluation, school administrators, transportation officials, and bus drivers, all demonstrated their knowledge of their plans and procedures. This took additional time and allowed attendees to actively participate in discussions and collaboration with the other districts to share information and learn from each other. The objectives were all demonstrated during the interview, and it also provided a unique learning opportunity for the attendees.

All three (3) criteria for this function were adequately demonstrated 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.e.1, 3.a.1, 3.c.2
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.3.5 Clinton School District *(evaluated out-of-sequence on October 29, 2018)*

The evaluation for three school districts in Clinton County (Camanche, Clinton, and Northeast) were all conducted at the same time, via interview, at the Clinton County EOC. During the evaluation, school administrators, transportation officials, and bus drivers, all demonstrated their knowledge of their plans and procedures. This took additional time and allowed attendees to actively participate in discussions and collaboration with the other districts to share information and learn from each other. The objectives were all demonstrated during the interview, and it also provided a unique learning opportunity for the attendees.

All three (3) criteria for this function were adequately demonstrated 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.e.1, 3.a.1, 3.c.2
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.3.6 Northeast School District *(evaluated out-of-sequence on October 29, 2018)*

The evaluation for three school districts in Clinton County (Camanche, Clinton, and Northeast) were all conducted at the same time, via interview, at the Clinton County EOC. During the evaluation, school administrators, transportation officials, and bus drivers, all demonstrated their knowledge of their plans and procedures. This took additional time and allowed attendees to actively participate in discussions and collaboration with the other districts to share

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information and learn from each other. The objectives were all demonstrated during the interview, and it also provided a unique learning opportunity for the attendees.

All three (3) criteria for this function were adequately demonstrated 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.e.1, 3.a.1, 3.c.2
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.3.7 Pleasant Valley School District (*evaluated out-of-sequence on October 29, 2018*)

The evaluation was conducted via interview, at the Clinton County EOC. The district staff was very knowledgeable of the district's plans and procedures and their individual role in the event of an incident/emergency at the Quad Cities Generating Station. A very proactive approach was noted in planning, preparation and collaboration for the notification and ongoing communications with parents of the school children during any type of incident or school evacuation.

All three (3) criteria for this function were adequately demonstrated 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.e.1, 3.a.1, 3.c.2
- b. LEVEL ONE: None

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- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

3.3.3.8 National Weather Service (NWS) Office - Davenport

The NWS staff was very knowledgeable of their plans and procedures for an incident/emergency at the QCGS, and properly demonstrated them during the exercise. The staff had a great attitude and worked well as a team.

The criteria for this function was adequately demonstrated 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: 5.a.1
- b. LEVEL ONE: None
- c. LEVEL TWO: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None
- h. ORO-IDENTIFIED OPPORTUNITIES FOR ENHANCEMENT: N/A

SECTION 4: CONCLUSION

Based on the results of this exercise and the out-of-sequence drills, the offsite radiological emergency response plans and preparedness for the State of Iowa and the affected local jurisdictions are deemed adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public in the event of a radiological emergency.

Therefore, 44 CFR Part 350 approval of the offsite radiological emergency response plans and preparedness for the State of Iowa, site-specific to the Quad Cities Generating Station, will remain in effect.

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APPENDIX A: EXERCISE TIMELINE

The following graphic represents the times recorded for various activities and decisions at each of the evaluated locations during the Quad Cities Generating Station (QCGS) exercise.

Note: A disparity in times is normal given the need for message transmissions and decision-making at the various locales. The times are recorded as dictated by the scenario.

EXERCISE TIMELINE										
DATE: December 4, 2018		QCGS - IOWA LOCATIONS								
Emergency Classification Level (ECL)	Time Utility Declared	Time that notification was received or action was taken								
		SEOC	DOSE ASSESSMENT	FORWARD COMMAND POST	FIELD TEAM COORD.	FIELD TEAM BLUE	FIELD TEAM GREEN	CLINTON County EOC	SCOTT County EOC	NWS
Unusual Event (NOUE)	816	831	N/A	N/A	855	N/A	N/A	837	835	N/A
Alert (ALERT)	852	912	N/A	925	926	N/A	N/A	913	915	940
Site Area Emergency (SAE)	1006	1013	1018	1019	1027	1025	1022	1013	1014	1026
General Emergency (GE)	1121	1127	1127	1133	1137	1135	1137	1126	1130	1139
Radiation Release Started	1121	1127	1120	1133	1139	1141	1140	1117	1122	N/A
Radiation Release Terminated	N/A									
Facility Declared Operational		1018	952	1014	935	1003	1004	939	921	
Governor Declared State of Emergency		944								
Precautionary Actions										
City, County and State Parks Closed		1018			1003	1003		1001	1017	
Schools Closed								1018	1021	
1st ANS Sequence (SAE)										
1st Siren Activation at SAE		1026						1026	1026	1031
Initial EAS Message &/or SNB		1031						1031/1032		1031
2nd ANS Sequence (GE)		1131						1131	1131	
2nd Siren Activation		1137						1137	1137	1143
2nd EAS Message &/or SNB		1143						1143		1143
Scott County IPAWS Message								N/A	1147	
Protective Action Decision - (Shelter 1 and 2)		1148						1150	1147	
3rd Siren Activation										
3rd Message (SNB)		1204						1204	1204	
KI Recommended to Emergency Workers		N/A								
Exercise Terminated		1235	1235	1245	1240	1400	1425	1255	1245	1245

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APPENDIX B: EVALUATORS/TEAM LEADERS

The evaluation team for this exercise and out-of-sequence drills consisted of DHS/FEMA Radiological Emergency Preparedness Program personnel, EPA, and ICF, a federal contractor.

DATE: 12-04-2018

SITE: Quad Cities Generating Station (QCGS)

LOCATION	EVALUATOR	AGENCY
Iowa State Emergency Operations Center	* Norm Valentine Lisa Rink Tom Hegele	FEMA RVII FEMA HQ ICF
Iowa Dose Assessment	Tom Essig	ICF
Iowa Forward Command Post	* Dan Kanakares Elena Joyner Cody McKown (OJT)	FEMA RVII FEMA RIX FEMA RVII
Iowa Field Team Coordination	Chuck Hooper	EPA
Iowa Field Team Blue	Mike Shuler	FEMA RIII
Iowa Field Team Green	David Stuenkel	ICF
Clinton County Emergency Operations Center	* Greg Voss Linda Gee Alberto Sifuentes	FEMA RVII FEMA RVI FEMA RIX
Scott County Emergency Operations Center	* Jeff Clark Darren Bates Brad DeKorte	FEMA RVII FEMA HQ FEMA RVI
Genesis Medical Center - Davenport	David Stuenkel	ICF
Medic EMS - Davenport	Darren Bates	FEMA HQ
Scott County Reception Center/EWMDS	* Andy Chancellor Norm Valentine Sharron McDuffie Darren Bates	FEMA RVII FEMA RVII FEMA RVII FEMA HQ
National Weather Service Office - Davenport	Sharron McDuffie	FEMA RVII
Camanche School District	Andy Chancellor	FEMA RVII
Clinton School District	Andy Chancellor	FEMA RVII
Northeast School District	Andy Chancellor	FEMA RVII
Pleasant Valley School District	Andy Chancellor	FEMA RVII
* Denotes Team Leader		

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APPENDIX C: Enhanced Exercise Initiative (EEI) Overview

The use of EEI at the 2018 Quad Cities Generating Station (QCGS) REP exercise was a joint effort, carried over from the initial use in the 2016 exercise, to increase collaboration between FEMA Region VII, the State of Iowa, and other stakeholders. A steering committee led all activities towards this purpose. The steering committee set achievable goals for this exercise, with the intent of refining and institutionalizing EEI practices for future REP exercises.

The EEI concept is a collaborative, pre-negotiated, departure from the traditional FEMA-only evaluation of REP exercises and places a greater emphasis on the Offsite Response Organizations (OROs) to self-identify, document and openly critique their own performance. The primary EEI goal was to increase federal, state, local, tribal, and private sector partnership; as well as to foster continuous improvement for the betterment of the REP program and REP communities.

The Special Observers, all highly motivated, highly experienced professionals in their area of expertise, were invaluable to the EEI process and their participation before, during, and after the exercise was outstanding.

The specific EEI components included:

ORO Self-Critique – greater emphasis on the part of ORO personnel and exercise participants to self-identify, document and openly critique their own performance – in full view of FEMA evaluators and staff. This includes the selection, training, and assignment of teams of ORO special observers to assist with the self-critique.

Thorough and facilitated “Hot Wash” – captured feedback immediately from exercise participants and ORO special observers. Both paper and online feedback forms were used to capture ORO information. FEMA evaluation findings and ORO comments and observations were kept separate to ensure proper attribution of the source of the information for subsequent joint adjudication.

Joint Adjudication Meeting (JAM) – provided opportunity for Iowa, and FEMA Region VII to validate consensus regarding exercise performance against REPP criteria. Once applicability to an assessment area was determined, it was placed into one of four categories:

FEMA-identified Items: Level 2 Findings or Plan Issues

ORO-Identified Items: Opportunities for enhancement with required corrective actions

Jointly-Identified Items: Opportunities for enhancement with required corrective actions

Level 1 Findings: Issued in accordance with existing requirements

After-Action Conference (AAC) – provided opportunity for exercise stakeholders to review and discuss findings in the draft list of issues/opportunities for enhancement, as well as review and concur upon proposed corrective actions in the Improvement Plan prior to finalization.

EEI SPECIAL OBSERVERS (SOs)

DATE: 12-04-2018

SITE: Quad Cities Generating Station (QCGS)

A total of seven Special Observers were utilized for four different functions/locations:

LOCATION	EVALUATOR	AGENCY
Iowa State EOC	* Larry Oliver Mark Shearer	Harrison County, IA – EM IA HSEMD
Iowa Dose Assessment	Steve Gebers	Independent Contractor
Clinton County EOC	* Rick Wulfekuhle Kevin Esmail	Buchanan County, IA – EM Linn County, IA – EMA
Scott County EOC	* Scott Hansen Chris Hare	Benton County, IA – EM Buchanan County, IA – EM
* Denotes Team Leader		

APPENDIX D: IMPROVEMENT PLAN (IOWA)

The Radiological Emergency Preparedness (REP) exercise conducted December 4, 2018, in the 10-mile Emergency Planning Zone (EPZ) around the Quad Cities Generating Station (QCGS) included a joint effort to increase collaboration between FEMA Region VII, the State of Iowa, and Offsite Response Organizations (OROs). This effort is collectively referred to as the Enhanced Exercise Initiative (EEI).

The EEI is a collaborative departure from the traditional FEMA-only evaluation of REP exercises and places a greater emphasis on the OROs to self-identify, document and openly critique their own performance; as well as provide opportunities to shed light on all hazards, and the whole community concepts that the REP program provides.

The following improvement plan includes details on all the areas for improvement identified by the OROs and Special Observers, with three of those jointly identified by FEMA. For each identified item in the improvement plan, the following information is provided: a summary of the issue, the planned enhancement action, the primary responsible agency with an agency point of contact (POC), the enhancement mechanism, a start date for the enhancement action, and an estimated completion date for the enhancement action.

NOTE: This Improvement Plan captures the planned enhancement actions as of the date of issuance of this report. For detailed and up to date information on the current status of any improvement plan item listed below, please contact the individual(s) listed in the “Agency POC” field associated with the improvement plan item.

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ORO Enhancement Number: IA-18-QUAD-1a1-01	Criterion: 1.a.1 Location: Clinton County EOC
Enhancement Opportunity: Alert Iowa was used to alert and mobilize EOC responders, however, a handful of responders to the Clinton County EOC did not receive notification. Additionally, a request has been made to add EOC Responder email addresses to the Alert Iowa Alert Roster for EOC Responders.	
Planned Enhancement Action: The Clinton County Emergency Management Agency will ensure changes to EOC responder contact information is updated within Alert Iowa accordingly and on an ongoing basis. Additionally, email addresses for the EOC Responder group members within Alert Iowa will be added to allow for email notification in addition to call and SMS.	
Primary Responsible Agency: Clinton County Emergency Management	
Enhancement Mechanism: System Update	Start Date: 1/16/2019
Agency POC: Chance Kness, 563-242-5712	Estimated Completion Date: 7/1/2019

ORO Enhancement Number: IA-18-QUAD-1a1-02		Criterion: 1.a.1 Location: Clinton County EOC	
Enhancement Opportunity: Although the use of Alert Iowa to alert and mobilize Clinton County EOC responders was integrated in to applicable Emergency Management SOPs, no clear instruction or direction was given to communications group responsible for initiating the mobilization alert.			
Planned Enhancement Action: Clinton County Emergency Management will ensure appropriate training and awareness regarding mobilization is provided to the communications group for initiating an EOC Mobilization.			
Primary Responsible Agency: Clinton County Emergency Management Agency			
Enhancement Mechanism: Training		Start Date: 1/16/2019	
Agency POC: Chance Kness, 563-242-5712		Completion Date: 5/1/2019	

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ORO Enhancement Number: IA-18-QUAD-1c1-01		Criterion: 1.c.1 Location: Clinton County EOC	
Enhancement Opportunity: A scribe is needed to document Clinton County EOC Manager actions and decisions during events. The Clinton County EOC Manager is often times moving immediately from one action or decision to the next without adequate time to document the previous actions in the appropriate location for EOC situation awareness.			
Planned Enhancement Action: Consider staffing a dedicated scribe position during full EOC activations, whose role is to document significant EOC Manager decisions/actions.			
Primary Responsible Agency: Clinton County Emergency Management Agency			
Enhancement Mechanism: Operational Process Modification		Start Date: 1/16/2019	
Agency POC: Chance Kness, 563-242-5712		Completion Date: 6/1/2020	

ORO Enhancement Number: IA-18-QUAD-1c1-02		Criterion: 1.c.1 Location: Clinton County EOC	
Enhancement Opportunity: A back-up to the EOC Manager is needed to assist with conducting briefings.			
Planned Enhancement Action: Consider training additional Emergency Management staff to perform EOC briefings and to assist with EOC Manager duties.			
Primary Responsible Agency: Clinton County Emergency Management Agency			
Enhancement Mechanism: Operational Process Modification		Start Date: 1/16/2019	
Agency POC: Chance Kness, 563-242-5712		Completion Date: 6/1/2020	

ORO Enhancement Number: IA-18-QUAD-1d1-01		Criterion: 1.d.1 Location: Clinton County EOC	
Enhancement Opportunity: The Clinton County Emergency Management Agency Plans Officer and WebEOC Assistant should coordinate closely with the County Public Information Officer (PIO) to ensure copies of public information releases are distributed to EOC tables in a timely manner.			
Planned Enhancement Action: Special emphasis will be placed on ensuring these positions closely coordinate their actions during future EOC training and exercises. Procedure modifications will also be considered as necessary to include a review of the documentation distribution list.			
Primary Responsible Agency: Clinton County Emergency Management Agency			
Enhancement Mechanism: Training/Potential Procedure Revision		Start Date: 1/16/2019	
Agency POC: Chance Kness, 563-242-5712		Completion Date: 1/15/2020	

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ORO Enhancement Number: IA-18-QUAD-1d1-02	Criterion: 1.d.1 Location: Clinton County EOC
Enhancement Opportunity: The Nuclear Accident Reporting System (NARS) line was degraded a number times during the exercise, with participants indicating one call was “garbled” and another call on the dedicated phone line in the EOC was “dropped completely.”	
Planned Enhancement Action: This enhancement opportunity has been captured in the utility corrective action program. Exelon is working towards an electronic notification system, which is expected to rectify this issue.	
Primary Responsible Agency: Exelon Generation	
Enhancement Mechanism: Potential System Upgrade	Start Date: 1/16/2019
Agency POC: Mike Muth, 779-231-1258	Completion Date: 7/1/2020

ORO Enhancement Number: IA-18-QUAD-1d1-03	Criterion: 1.d.1 Location: Clinton County EOC
Enhancement Opportunity: There was a failure of the dedicated headset for the utility representative in the Clinton County EOC.	
Planned Enhancement Action: Although the issue was rectified rapidly thanks to support from Clinton County Information Technology (IT) staff, Clinton County Emergency Management will ensure this headset is continuously connected to a power source going forward.	
Primary Responsible Agency: Clinton County Emergency Management Agency	
Enhancement Mechanism: Operational Process Modification	Start Date: 1/16/2019
Agency POC: Chance Kness, 563-242-5712	Estimated Completion Date: 1/16/2019

ORO Enhancement Number: IA-18-QUAD-1e1-01	Criterion: 1.e.1 Location: Clinton County EOC
Enhancement Opportunity: It was difficult to determine which responders represented which functions or roles within the Clinton County EOC without any sort of name tags/signage/vests, etc. This would be particularly confusing for any new or newer EOC responders.	
Planned Enhancement Action: Clinton County Emergency Management Agency should consider ordering vests/placards/name plates for the functionally assigned tables or responders in the EOC. It is recognized that a new EOC is being built in Clinton County and this enhancement action may be delayed and implemented in the new facility.	
Primary Responsible Agency: Clinton County Emergency Management Agency	
Enhancement Mechanism: Equipment/Supplies Order	Start Date: 1/16/2019
Agency POC: Chance Kness, 563-242-5712	Completion Date: 7/1/2020

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ORO Enhancement Number: IA-18-QUAD-2a1-01	Criterion: 2.a.1 Location: Clinton County EOC
Enhancement Opportunity: Although staffing at Clinton County agencies/departments can be dynamic, a greater emphasis must be placed on identifying and training Dosimetry Control Officers (DCOs) within county response agencies.	
Planned Enhancement Action: Clinton County Emergency Management Agency will work with county agencies/departments to identify appropriate staff to serve as response agency DCOs. Clinton County Emergency Management, in coordination with the Iowa Department of Homeland Security and Emergency Management will offer and provide training to county-level response agency DCOs on an annual basis once identified.	
Primary Responsible Agency: Clinton County Emergency Management Agency	
Enhancement Mechanism: Operational Process Improvement/Training	Start Date: 1/16/2019
Agency POC: Chance Kness, 563-242-5712	Completion Date: 1/15/2020 - Ongoing

ORO Enhancement Number: IA-18-QUAD-2b1-01		Criterion: 2.b.1 Location: Clinton County EOC	
Enhancement Opportunity: Clinton County Officials, upon receipt of the General Emergency NARS notification, began planning for an evacuation per the utility recommendations. Some officials seemed to be unaware that utility recommendations are not always taken “as-is” and that the response plan calls for waiting for state recommendations before local decisions are made and implemented. Local elected officials also seemed to believe they were responsible for all decision-making in the county, including the need to dismiss schools, etc. Plans call for these decisions to be made and implemented by the appropriate authorities, i.e. school officials.			
Planned Enhancement Action: An emphasis on the roles and responsibilities of local elected officials will be made during future annual EOC training. Additionally, annual training will further emphasize the protective action decision making process at the local level, including the role of the utility recommendations, the state recommendations, and the ultimate local decisions. Clinton County may consider removing the distribution of the NARS to EOC responders to reduce the potential for officials taking action on the utility protective action recommendations when it may differ from the State of Iowa protective action recommendations. Clinton County may consider displaying an information board for EOC responders that includes information from the NARS, i.e. Emergency Classification, Wind Speed, Wind Direction, and radiological release status. There is a current WebEOC Board – Meteorological Status - that includes this information and could be displayed by Clinton County.			
Primary Responsible Agency: Clinton County Emergency Management Agency			
Enhancement Mechanism: Training/Operational Process Modification		Start Date: 1/16/2019	
Agency POC: Chance Kness, 563-242-5712		Estimated Completion Date: 1/15/2020	

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ORO Enhancement Number: IA-18-QUAD-3a1-01		Criterion: 3.a.1 Location: Clinton County EOC	
Enhancement Opportunity: The Clinton County EOC Dosimetry Control Officer (DCO) provided an incomplete dosimetry briefing to the EOC. The DCO attempted to brief from the Emergency Worker Handbook rather than from the established procedure/checklist, and as a result failed to provide critical information on dose limits for pregnant emergency workers and specifics on the units of measurement for emergency worker limits. Additionally, out-of-date emergency worker handbooks and dosimetry record cards were made available to emergency workers and the incorrect self-reading dosimetry (0-200mR vs. 0-5R) were distributed as part of the field emergency worker briefing.			
Planned Enhancement Action: Additional training is necessary for the EOC DCO in Clinton County. Emphasis will be placed on the requirement to use established procedures and checklists when conducting emergency worker briefings to ensure all required information is presented. Additionally, Clinton County DCO will separate the storage of 0-200 mR and 0-5 R dosimeters to ensure the inadvertent distribution of an incorrect range dosimeter does not occur.			
Primary Responsible Agency: Clinton County Emergency Management Agency			
Enhancement Mechanism: Additional Training/Equipment Inventory		Start Date: 1/16/2019	
Agency POC: Chance Kness, 563-242-5712		Estimated Completion Date: 1/15/2020	

ORO Enhancement Number: IA-18-QUAD-3d1-01	Criterion: 3.d.1 Location: Clinton County EOC
Enhancement Opportunity: Participants involved in decision-making regarding traffic and access control seemed to be working from memory or addressing issues in an ad hoc fashion. Unnecessary time was spent discussing perceived issues related to traffic and access control that would have been answered by consulting with plans and checklists and/or through consultation with the EOC Manager.	
Planned Enhancement Action: Additional training will be provided to traffic and access control decision-makers to ensure they are familiar with existing plans and procedures. Additionally, an emphasis on the use of procedures will be a focus of future training.	
Primary Responsible Agency: Clinton County Emergency Management Agency	
Enhancement Mechanism: Additional Training	Start Date: 1/16/2019
Agency POC: Chance Kness, 563-242-5712	Estimated Completion Date: 1/15/2020

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ORO Enhancement Number: IA-18-QUAD-5a1-01	Criterion: 5.a.1 Location: Clinton County EOC
Enhancement Opportunity: A need has been identified to coordinate siren sounding not just among Iowa counties, but also with impacted Illinois counties. Although planning has been ongoing to implement this coordination, exercise participants noted the clear disconnect between Iowa and Illinois regarding the sounding of sirens, despite an admirable attempt by Rock Island County, IL to coordinate the effort unexpectedly during the exercise. Coordination of siren sounding across state lines in response to an event at the Quad Cities Generating Station should be a priority for all parties involved going forward.	
Planned Enhancement Action: Clinton County Emergency Management Agency, in coordination with the States of Iowa and Illinois, Exelon, Scott County Emergency Management Agency, and Rock Island and Whiteside Counties in Illinois, will continue to work to implement a process for coordinated siren sounding in all four counties. This project will be recognized by all parties as a priority for implementation before the next evaluated exercise and planning meetings will be scheduled to ensure implementation can be achieved.	
Primary Responsible Agency: Multiple Agencies	
Enhancement Mechanism: Planning Meetings & Plan/Procedure Modification	Start Date: 1/16/2019
Agency POC: Multiple	Estimated Completion Date: 7/1/2020

ORO Enhancement Number: IA-18-QUAD-5b1-01	Criterion: 5.b.1 Location: Clinton County EOC
Enhancement Opportunity: The county decision-makers in Clinton County spent unnecessary time attempting to verify or address rumors injected during the exercise. The Clinton County Public Information Officer (PIOs) should be engaged anytime rumors are required to be addressed. County PIOs have the responsibility to work with appropriate officials to validate any rumor information and to ensure rumors are addressed accordingly.	
Planned Enhancement Action: Future training will focus on roles and responsibilities of key EOC personnel, to include county decision-makers and county PIO's and the process for addressing rumors.	
Primary Responsible Agency: Clinton County Emergency Management Agency	
Enhancement Mechanism: Training	Start Date: 1/16/2019
Agency POC: Chance Kness, 563-242-5712	Estimated Completion Date: 1/15/2020

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ORO Enhancement Number: IA-18-QUAD-1a1-03	Criterion: 1.a.1 Location: Scott County EOC
Enhancement Opportunity: A number of participants were not notified via the automated call-out system, Alert Iowa, resulting in some delays in mobilization of EOC responders.	
Planned Enhancement Action: The Scott County EOC Responder group within Alert Iowa should be reviewed against organization notification lists to ensure all appropriate responders are included in the group for call-out. This group should be reviewed and updated as needed anytime there are changes to EOC responder contact information.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: System Update	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 7/1/2019

ORO Enhancement Number: IA-18-QUAD-1c1-03	Criterion: 1.c.1 Location: Scott County EOC
Enhancement Opportunity: The designated position for documenting actions in WebEOC is situated with the Public Information group, and as such had a difficult time hearing all pertinent information to be captured. This position was also mistaken for a Public Information Officer and therefore did not receive copies of the Nuclear Accident Reporting System (NARS) forms when they were distributed. Other participants also questioned the continued need for a designated WebEOC scribe in the EOC.	
Planned Enhancement Action: Scott County Emergency Management will review the continued need for a designated WebEOC position within the EOC. If the need continues to exist, the position's placement within the EOC will be evaluated and adjusted as necessary to ensure all pertinent information can be heard and captured from the position's location with the EOC.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Operational Process Modification	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 1/15/2020

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ORO Enhancement Number: IA-18-QUAD-1c1-04	Criterion: 1.c.1 Location: Scott County EOC
Enhancement Opportunity: The U.S. Coast Guard Representative in the Scott County EOC did not have a specific SOP or any guidance to follow to ensure interagency coordination for measures such as closing of the Mississippi River.	
Planned Enhancement Action: Scott County Emergency Management, in coordination with the States of Iowa and Illinois, Exelon, the U.S. Coast Guard, Clinton County Emergency Management Agency, and Rock Island and Whiteside Counties in Illinois, will develop a process for requesting closure of the Mississippi River during an event at the Quad Cities Generating Station. This process will take into account triggers for requesting closure, primary responsible parties for making such a request, and roles and responsibilities of appropriate parties. Appropriate state and local procedures, plans, and guidance will be revised/created to reflect the agreed upon process.	
Primary Responsible Agency: Iowa Department of Homeland Security and Emergency Management	
Enhancement Mechanism: Planning Meetings & Plan/Procedure Revisions	Start Date: 1/16/2019
Agency POC: Jacob Nicholson. 515-323-4337	Estimated Completion Date: 7/1/2020

ORO Enhancement Number: IA-18-QUAD-1c1-05	Criterion: 1.c.1 Location: Scott County EOC
Enhancement Opportunity: Standard Operating Procedures (SOPs) for schools and transportation providers require revision to better integrate into the overall response. Additionally, MEDIC Ambulance Service and River Bend Transit representatives were not present in the EOC for coordination of potential transport issues during an event.	
Planned Enhancement Action: Scott County Emergency Management will review SOPs for schools and transportation providers and make appropriate revisions as needed to ensure integration with the overall response. Additionally, MEDIC Ambulance Service and River Bend Transit will be invited to send a representative to the Scott County EOC for future events for the Quad Cities Generating Station. Any necessary SOPs or guidance for the new MEDIC Ambulance Service and River Bend Transit representative will be developed as needed to ensure integration into the response.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Procedure Revision	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 7/1/2020

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ORO Enhancement Number: IA-18-QUAD-1c1-06	Criterion: 1.c.1 Location: Scott County EOC
Enhancement Opportunity: Although local elected officials were represented in the EOC, it was noted that heavier “buy-in” and more opportunities for participation by local elected officials is needed.	
Planned Enhancement Action: Scott County Emergency Management will engage the local elected officials within the county during routine and recurring meetings to emphasize the importance of elected official representation in the Scott County EOC. Additionally, elected officials will be targeted for attendance at future EOC training offerings. Finally, Scott County Emergency Management, in coordination with the state of Iowa and Exelon, will provide content and feedback for the development of potential future exercise injects designed to drive greater participation by local elected officials.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Training/Meetings/Exercise Design Modifications	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 7/1/2020

ORO Enhancement Number: IA-18-QUAD-1d1-04	Criterion: 1.d.1 Location: Scott County EOC
Enhancement Opportunity: The web-based chat system, Mobile Architecture for Communications Handling (MACH) was used effectively by the Iowa Department of Public Safety (DPS), however, it was noted that additional response agencies with access to MACH were not added to the established chat group for the event.	
Planned Enhancement Action: The state of Iowa will work with DPS to ensure that appropriate response agencies with access to MACH are included in chat groups as they are established in response to events at the Quad Cities Generating Station.	
Primary Responsible Agency: Iowa Department of Homeland Security and Emergency Management	
Enhancement Mechanism: Operational Process Modification	Start Date: 1/16/2019
Agency POC: Jacob Nicholson, 515-323-4337	Estimated Completion Date: 1/15/2020

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ORO Enhancement Number: IA-18-QUAD-1d1-05		Criterion: 1.d.1 Location: Scott County EOC	
Enhancement Opportunity: The Administrative Hotline, an open conference line used by all Iowa facilities to coordinate information sharing and protective action recommendations and decisions, was difficult to hear within the Scott County EOC.			
Planned Enhancement Action: Scott County Emergency Management will review the current audio configuration for this conference line within the EOC and will explore and implement alternative configuration(s) as needed to ensure the line can be easily understood by all necessary positions.			
Primary Responsible Agency: Scott County Emergency Management Agency			
Enhancement Mechanism: Potential Equipment Purchase/Reconfiguration		Start Date: 1/16/2019	
Agency POC: David Donovan, 563-484-3050		Estimated Completion Date: 1/15/2020	

ORO Enhancement Number: IA-18-QUAD-1e1-02		Criterion: 1.e.1 Location: Scott County EOC	
Enhancement Opportunity: Additional copies of Quad Cities EALs have been requested by EOC participants.			
Planned Enhancement Action: Scott County Emergency Management will work with Exelon to obtain and place additional copies of Quad Cities Generating Station EALs as needed. Exelon will provide an electronic copy of the QCGS EAL's. Scott County Emergency Management will control all EOC copies of the EALS to ensure the most current are in place.			
Primary Responsible Agency: Scott County Emergency Management Agency			
Enhancement Mechanism: Additional Procedures/Supplies		Start Date: 1/16/2019	
Agency POC: David Donovan, 563-484-3050		Estimated Completion Date: 7/1/2019	

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ORO Enhancement Number: IA-18-QUAD-1e1-03	Criterion: 1.e.1 Location: Scott County EOC
Enhancement Opportunity: Scott County GIS supported the EOC with situational awareness and dynamic mapping capabilities, however, it was noted that their products could be further enhanced if provided plume data from the State EOC for use with the ALOHA and CAMEO systems. The incorporation of scenario wind/weather conditions into GIS products was also requested for future events.	
Planned Enhancement Action: Scott County Emergency Management will work with Scott County GIS and the State of Iowa to explore the possibility of sharing plume data generated by Dose Assessment at the State EOC. Appropriate parties will assess the feasibility and optimal means for sharing the requested data. SEOC data products can be shared as a “static” map or shape file in which Scott County can overlay local information on impacted areas and facilities. Additionally, any potential further enhancements to GIS products in Scott County through the expanded use of scenario weather conditions will be evaluated and implemented as needed.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Operational Process Modifications	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 7/1/2020

ORO Enhancement Number: IA-18-QUAD-1e1-04	Criterion: 1.e.1 Location: Scott County EOC
Enhancement Opportunity: Scott County EOC participants connected to the EOC Guest Wireless network had no means to print within the EOC.	
Planned Enhancement Action: Scott County Emergency Management will work with Scott County IT to explore a solution that would enable those connected to the guest network to print (wireless printer or other option) within the EOC.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Potential Equipment Purchase	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 1/15/2020

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ORO Enhancement Number: IA-18-QUAD-2c1-01	Criterion: 2.c.1 Location: Scott County EOC
Enhancement Opportunity: During the exercise, Pleasant Valley School Officials decided to conduct a precautionary relocation of the three schools within the EPZ. Instead of relocating the impacted school children to the North Scott High School in Eldridge, school officials decided to move those students and staff to the Pleasant Valley High School. This action is the preferred action for school officials, is more logical and convenient for parent pick-up, and would potentially result in less traffic congestion surrounding North Scott High School. Additionally, school officials identified the need for prompts within their SOPs to ensure follow-up discussions take place concerning the status of schools for the following day in any given event. Finally, it was determined by Pleasant Valley school officials that their district buses were not programmed with a common channel for use with North Scott School District officials/buses should relocation need to occur to the North Scott High School.	
Planned Enhancement Action: Scott County Emergency Management will work closely with school officials to evaluate this proposed change to the response plan for relocation of school children. Should this change be implemented, all appropriate plans, SOPs, and public information materials will be revised accordingly. Should this proposed change not be implemented, Pleasant Valley School District bus radios should be programmed with a common frequency for use with North Scott School District during relocation operations.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Potential Plan Revision	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 7/1/2020

ORO Enhancement Number: IA-18-QUAD-2c1-02	Criterion: 2.c.1 Location: Scott County EOC
Enhancement Opportunity: Scott County EOC participants identified a continuing need for attention to the special population database.	
Planned Enhancement Action: Scott County Emergency Management will continue to focus efforts on ensuring the special population database is kept up-to-date and as accurate as possible. Additionally, Scott County Emergency Management will explore what other sources of information exist that could potentially improve the accuracy and completeness of the database. Both Scott and Clinton Counties recognize that the special population database scope extends beyond the REP Program and will explore an all-hazards solution to identify and track the special needs populations.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: System Update	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 7/1/2020

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ORO Enhancement Number: IA-18-QUAD-3a1-02		Criterion: 3.a.1 Location: Scott County EOC	
Enhancement Opportunity: While the demonstration of issuing self-protective equipment was adequate, the dosimetry coordinator did not use/follow written guidance. This led to a less efficient issuing process, which would be confusing to inexperienced emergency workers. The dosimetry coordinator should always follow the written procedure for issuing self-protective equipment in order to give the emergency worker confidence in use of the equipment.			
Planned Enhancement Action: Scott County Emergency Management will ensure additional refresher training is provided to the dosimetry coordinator(s), with an emphasis on use of written guidance and procedures.			
Primary Responsible Agency: Scott County Emergency Management Agency			
Enhancement Mechanism: Training		Start Date: 1/16/2019	
Agency POC: David Donovan, 563-484-3050		Estimated Completion Date: 1/15/2020	

ORO Enhancement Number: IA-18-QUAD-3d2-01		Criterion: 3.d.2 Location: Scott County EOC	
Enhancement Opportunity: Scott County participants indicated that the same or similar traffic impediment scenarios have been presented for the past several exercises and has requested a different or more challenging impediment scenario for future exercises.			
Planned Enhancement Action: The state of Iowa trusted agent will work with Exelon to craft detailed unique and/or more challenging traffic impediment injects/scenarios for future exercises.			
Primary Responsible Agency: Iowa Department of Homeland Security and Emergency Management			
Enhancement Mechanism: Scenario Design Revision		Start Date: 1/16/2019	
Agency POC: Jacob Nicholson, 515-323-4337		Estimated Completion Date: 5/1/2020	

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ORO Enhancement Number: IA-18-QUAD-5a1-02	Criterion: 5.a.1 Location: Scott County EOC
Enhancement Opportunity: After the EOC Manager received the utility notification form for General Emergency from the communications staff, siren activation time was coordinated with Clinton County, wherein it was agreed to activate sirens at 1137. The EOC Manager did not notify the communications staff of the siren activation time. At 1135, one of the communications staff went to the EOC Policy Group and asked if sirens were supposed to be activated. The Policy Group informed them of the siren activation for 1137. Although the outcome was positive due to the communications staff's diligence and awareness of the change in plant status and protocols for siren activation, the EOC Manager should use the procedures and checklists that have been created to stay on task and ensure particularly time sensitive actions are followed through to completion.	
Planned Enhancement Action: Scott County Emergency Management will ensure that use of checklists and procedures is emphasized during annual training for the EOC Manager position. Additionally, consideration will be given to potential revisions to appropriate procedures to ensure time sensitive actions are followed through to completion.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Training/Potential Procedure Revision	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 1/15/2020

ORO Enhancement Number: IA-18-QUAD-5b1-02	Criterion: 5.b.1 Location: Scott County EOC
Enhancement Opportunity: Scott County EOC decided to supplement the public alert and notification process through the use of IPAWS and social media (simulated) during this exercise. This decision was applauded by participants and evaluators, however, because the use of these technologies to supplement public alert and notification during an event at the Quad Cities Generating Station is outside of established plans and procedures, no guidance for Public Information Officers (PIOs) or other participants exist for their use during an exercise or event.	
Planned Enhancement Action: Scott County Emergency Management will determine if the use of IPAWS and social media to supplement established public alert and notification process should be incorporated into the Scott County Radiological Emergency Response Plan. If the use of these technologies is formally adopted into the plan, consideration will be given to the development of specific procedures and other guidance for personnel to use to ensure consistent application and use of the technology. These processes will also be included in future training for appropriate staff responsible for their use.	
Primary Responsible Agency: Scott County Emergency Management Agency	
Enhancement Mechanism: Potential Plan Revision/Procedure Development	Start Date: 1/16/2019
Agency POC: David Donovan, 563-484-3050	Estimated Completion Date: 1/15/2020

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ORO Enhancement Number: IA-18-QUAD-5b1-03	Criterion: 5.b.1 Location: Scott County EOC
<p>Enhancement Opportunity: The Scott County Public Information Officers (PIOs) appended wording for the General Emergency EAS Message to the Scott County Message #1 announcing evacuation of Subarea 2. This General Emergency EAS Message wording should not have been generated or appended to Message #1, as Clinton County had already issued the EAS Message on behalf of both counties. Additionally, the EAS Message wording appended to Scott County Message #1 included information indicating that the message will be repeated every 30 minutes until cancelled, which is not specified in the plan.</p> <p>The Scott County PIOs also unnecessarily generated and transmitted to the State EOC “Scott County Message SOP 5” for further distribution to media outlets. This message concerned placing dairy animals on stored feed and covered water for the entire EPZ, which was handled through the issuance of a State Press Release (PR2 in this instance)</p> <p>Finally, Scott County PIOs issued “Scott Message 40,” announcing the precautionary relocation of school children in the affected subareas. This message was not transmitted to the State EOC for further distribution to media outlets and was only uploaded to the Scott County Event Log in WebEOC.</p>	
<p>Planned Enhancement Action: Scott County Emergency Management, in coordination with the state of Iowa, will conduct additional training for the Scott County PIO(s) to ensure a clear understanding of the separation of duties between Scott County PIOs, Clinton County PIOs, and the State of Iowa PIOs. Training will emphasize which messages are to be generated, whom is responsible for the messaging, and where each message is to be loaded in to WebEOC for further dissemination as required. Scott County may consider conducting an annual table top exercise for PIOs to practice their responsibilities for emergency messaging. Finally, Scott County message templates will be reviewed to ensure there are no inaccurate statements in the EAS Message language.</p>	
<p>Primary Responsible Agency: Scott County Emergency Management Agency</p>	
<p>Enhancement Mechanism: Training/Potential Plan or Procedure Revisions</p>	<p>Start Date: 1/16/2019</p>
<p>Agency POC: David Donovan, 563-484-3050</p>	<p>Estimated Completion Date: 7/01/2020</p>

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ORO Enhancement Number: IA-18-QUAD-1d1-06	Criterion: 1.d.1 Location: Iowa Dose Assessment
Enhancement Opportunity: Although there was minimal impact due to the use of RadResponder and mobile phone back-up communications, Iowa Dose Assessment was unable to communicate with the field teams via radio for much of the exercise.	
Planned Enhancement Action: The failure of radio communications with the field teams was due to several factors to include battery failure and inadequate signal strength on the network. The statewide radio network utilized had not been fully launched at the time of the exercise, therefore some gaps in network coverage were expected. Feedback will be provided on coverage gaps in the Quad Cities area to the network administrators. Additionally, replacement batteries for field team radios should be purchased to ensure adequate charge is available for operational use during an event.	
Primary Responsible Agency: Iowa Department of Homeland Security and Emergency Management	
Enhancement Mechanism: Equipment Purchase/Network Maintenance	Start Date: 1/16/2019
Agency POC: Jacob Nicholson, 515-323-4337	Estimated Completion Date: 3/1/2019

ORO Enhancement Number: IA-18-QUAD-1e1-05	Criterion: 1.e.1 Location: Iowa Dose Assessment
Enhancement Opportunity: Participants noted that the version of URI RASCAL at the Iowa State EOC is not the same version used by the utility. For example, Pathway K on the Iowa State EOC system was Pathway L on the utility system. While the dose assessment team was able to work through this with the plant dose assessment team, it caused confusion initially and the two systems need to be maintained on the same version in the future.	
Planned Enhancement Action: The Iowa Department of Public Health (IDPH) will work with Exelon to obtain the current version of URI RASCAL used by the utility dose assessment. Additionally, both parties (IDPH and the utility) will ensure updates to the software at their respective locations will be coordinated to ensure consistency across organizations.	
Primary Responsible Agency: Iowa Department of Public Health	
Enhancement Mechanism: Software Update/Operational Process Modification	Start Date: 1/16/2019
Agency POC: Angela Leek, 515-281-3478	Estimated Completion Date: 7/1/2019

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ORO Enhancement Number: IA-18-QUAD-2a1-02	Criterion: 2.a.1 Location: Iowa Dose Assessment
Enhancement Opportunity: State plans call for the Iowa Department of Public Health (IDPH) dose assessment group to seek authorization from the IDPH Medical Director for the use of Potassium Iodide for emergency workers when needed. Participants identified a need to more clearly designate the appropriate authorization form within dose assessment procedures and to consider outlining an alternative process to seek Medical Director approval if/when the Medical Director is not physically located in the State EOC.	
Planned Enhancement Action: IDPH will make appropriate revisions to procedures to ensure the appropriate authorization forms and its intended use are clearly designated. Additionally, alternative internal workflow processes will be developed as needed to ensure rapid Medical Director approval can be obtained regardless of work location.	
Primary Responsible Agency: Iowa Department of Public Health	
Enhancement Mechanism: Procedure Revisions/Development	Start Date: 1/16/2019
Agency POC: Angela Leek, 515-281-3478	Estimated Completion Date: 12/31/2019

ORO Enhancement Number: IA-18-QUAD-1c1-07	Criterion: 1.c.1 Location: Iowa State EOC
Enhancement Opportunity: Participants identified inconsistencies between key procedures used at the State EOC and the State Forward Command Post (FCP). The Department of Natural Resources (DNR) State EOC and FCP procedures are written to implement a river closure automatically at the Site Area Emergency. Decision-maker procedures, such as the HSEMD Director, Dose Assessment, and HSEMD Operations do not have this as an automatic response action, but rather something to be considered. Additionally, participants recognized that the closure of relevant portions of the Upper Mississippi River National Wildlife Refuge in the Quad Cities area (to be considered at the "Alert" classification) essentially requires closure of the Mississippi River to restrict access.	
Planned Enhancement Action: All appropriate procedures will be reviewed for consistency and revised as needed to reflect that river closure will be considered at Site Area Emergency classification. New processes for coordination of a closure of the Mississippi River with Illinois and the U.S. Coast Guard will be incorporated into existing procedures as well. Additionally, special notes within the appropriate procedures will be considered to ensure that the closure of the relevant portions of the Upper Mississippi River National Wildlife Refuge necessitates the closure of the Mississippi River as well.	
Primary Responsible Agency: Iowa Department of Homeland Security and Emergency Management	
Enhancement Mechanism: Procedure Revision	Start Date: 1/16/2019
Agency POC: Jacob Nicholson, 515-323-4337	Estimated Completion Date: 12/31/2019

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ORO Enhancement Number: IA-18-QUAD-1e1-06	Criterion: 1.e.1 Location: Iowa State EOC
Enhancement Opportunity: GIS staff with the Iowa Department of Homeland Security and Emergency Management have developed a dynamic mapping tool for use by select state agencies during a nuclear power plant event, including the Department of Inspections and Appeals (DIA) and the Iowa Department on Aging (IDA). Although the tool has greatly increased situational awareness during these events, participants from those agencies identified a need for additional datasets to be included in the tool, to include schools, hospitals, and long term care facilities.	
Planned Enhancement Action: GIS staff will continue to work with agency representatives from DIA and IDA to ensure all pertinent data sets are available for use with the tool.	
Primary Responsible Agency: Iowa Department of Homeland Security and Emergency Management	
Enhancement Mechanism: System Development	Start Date: 1/16/2019
Agency POC: Jacob Nicholson, 515-323-4337	Estimated Completion Date: 1/15/2020

ORO Enhancement Number: IA-18-QUAD-1e1-07		Criterion: 1.e.1 Location: Iowa State EOC
Enhancement Opportunity: The American Red Cross (ARC) representative to the State EOC recognized that the internal procedure for the ARC representative was very out of date and required a comprehensive revision.		
Planned Enhancement Action: The ARC will make revisions to their internal procedure as appropriate, with support from the Iowa Department of Homeland Security and Emergency Management as needed. Copies of the procedure, once updated, will be maintained at the State EOC for use by the ARC representative in the future.		
Primary Responsible Agency: American Red Cross		
Enhancement Mechanism: Procedure Revision		Start Date: 1/16/2019
Agency POC: Keith Kuperman, 515-471-8329		Estimated Completion Date: 12/31/2019

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ORO Enhancement Number: IA-18-QUAD-5b1-04	Criterion: 5.b.1 Location: Iowa State EOC
Enhancement Opportunity: State EOC Public Inquiry staff responded to public inquiry/exercise injects indicating that reporters wanted to go "to the plant" or the Exelon JIC during the exercise. These requests should be routed to the JIC Manager in Warrenville, however, state PIOs did not have a direct number for that individual. State staff routing the calls to the State spokesperson at the JIC to pass them along to the JIC Manager. Contact information for the Exelon JIC Manager should be readily available on the State EOC Phone List.	
Planned Enhancement Action: The Iowa Department of Homeland Security and Emergency Management will work with Exelon to obtain/confirm contact information for the JIC Manager. The State EOC Phone List for Quad Cities Generating Station will be revised to include the requested contact information.	
Primary Responsible Agency: Iowa Department of Homeland Security and Emergency Management	
Enhancement Mechanism: Phone List Update	Start Date: 1/16/2019
Agency POC: Kathy Stodola, 515-323-4320	Estimated Completion Date: 4/1/2019