



**FEMA**

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Nuclear Regulatory Commission Headquarters  
Office of Nuclear Security and Incident Response  
Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, District of Columbia 20555-0001

To Whom It May Concern:

Enclosed is the final After Action Report/Improvement Plan for the May 22, 2012, Salem/Hope Creek Nuclear Generating Stations (S/HCNGS) Radiological Emergency Preparedness Plume Exercise.

No deficiencies were identified as a result of this exercise; during the Out of Sequence Exercise, three Areas Requiring Corrective Action (ARCA) were identified and all three of the issues were re-demonstrated successfully. One planning issue was identified and was successfully corrected on May 21, 2012.

During the Plume Exercise, one planning issue applying to both Field Monitoring Teams was identified and was successfully corrected on June 4, 2012. There are no outstanding issues.

There were no outstanding ARCAs or planning issues from previous exercises.

Based on the results of the exercise and a review of the offsite radiological emergency response plans and procedures submitted, FEMA Region III has determined they are adequate and there is reasonable assurance they can be implemented, as demonstrated during this exercise.

If you have any further questions, please contact me or the Salem/Hope Creek Nuclear Generating Stations Project Officer, Tina Lai Thomas at (215) 931-5680.

Sincerely

A handwritten signature in black ink, appearing to read "R. Welch".

Robert P. Welch  
Acting, Regional Administrator

Enclosure

MSI 201  
EX 49



Salem/Hope Creek Nuclear Generating Stations

# After Action Report/ Improvement Plan

Exercise Date - May 22, 2012

Radiological Emergency Preparedness (REP) Program



**FEMA**

*Published August 14, 2012*

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# Salem/Hope Creek Nuclear Generating Stations After Action Report/Improvement Plan

*Published August 14, 2012*

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## EXECUTIVE SUMMARY

On May 22, 2012, a full-scale plume exercise was demonstrated and evaluated for the 10 Mile Emergency Planning Zone (EPZ) plume exposure pathway around the Salem/Hope Creek Nuclear Generating Stations (S/HCNGS) by the Federal Emergency Management Agency (FEMA), Region III. Out-of-Sequence demonstrations were conducted on April 30, 2012 and May 1, 2012. The purpose of the Plume Exercise and Out-of-Sequence (OOS) demonstrations was to assess the capabilities of State and county jurisdictions to implement Radiological Emergency Plans and Procedures (REPP) to protect the property and lives of residents and transients in the event of an emergency at S/HCNGS.

The findings in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA, Region III Radiological Assistance Committee (RAC) Chairperson, and approved by FEMA Headquarters. These reports are provided to the Nuclear Regulatory Commission (NRC) and participating states. State and local governments utilize the findings contained in these reports for the purposes of planning, training, and improving emergency preparedness.

The most recent full-scale exercise at this site was evaluated on May 18, 2010.

The evaluation of this 2012 exercise determined that there were no Deficiencies identified as a result of this exercise; during the Out of Sequence Exercise, three Areas Requiring Corrective Action (ARCA) were identified and all three of the issues were re-demonstrated successfully. One planning issue was identified and was successfully corrected on May 21, 2012.

During the Plume Exercise, one planning issue applying to both Field Monitoring Teams was identified and was successfully corrected on June 4, 2012. There are no outstanding issues.

There were no outstanding ARCAs or planning issues from previous exercises.

FEMA wishes to acknowledge the efforts of the many individuals in the State of Delaware; the risk jurisdictions of Kent County and New Castle County who were evaluated at this exercise.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this

responsibility by volunteering to provide vital emergency services to their communities.  
Cooperation and teamwork of all the participants were evident during the exercise.

## **SECTION 1: EXERCISE OVERVIEW**

### **1.1 Exercise Details**

**Exercise Name**

Salem/Hope Creek Nuclear Generating Stations

**Type of Exercise**

Plume

**Exercise Date**

May 22, 2012

**Program**

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

**Scenario Type**

Radiological Emergency

### **1.2 Exercise Planning Team Leadership**

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## 1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Salem/Hope Creek Nuclear Generating Stations exercise:

### State Jurisdictions

- Delaware Department of Transportation (DelDOT)
- Delaware Emergency Management Agency (DEMA)
- Delaware Department of Education (DEDOE)
- Delaware National Guard
- Delaware River and Bay Authority
- Delaware State Police (DSP)
- Department of Natural Resources and Environmental Control (DNREC)
- Department of Services for Children, Youth, and Families (DSCYF)
- Division of Fish and Wildlife (DFW)
- Division of Public Health (DPH)
- Division of Social Services (DSS)
- New Jersey Department of Environmental Protection
- New Jersey Department of Health
- New Jersey State Police/Office of Emergency Management
- New Jersey Bureau of Nuclear Engineering
- University of Delaware

### Risk Jurisdictions

- Kent County
  - Kent County Levy Court
  - Kent County Public Safety
  - Kent County Emergency Management
  - Kent County Amateur Radio Club

Civil Air Patrol

Delaware State Police

New Castle County

Delaware National Guard

City of Wilmington Office of Emergency Management

New Castle County Police Department

Delaware Public Health

New Castle County Information Systems

New Castle County Emergency Medical Services

New Castle County Community Services

New Castle County Fire Board

New Castle County Special Services

New Castle County Department of Public Safety/Office of Emergency Management

Private Organizations

American Red Cross (ARC)

Civil Air Patrol

Delaware Volunteer Organization Active in Disaster (DEVOAD)

Public Services Enterprise Group (PSE&G)

Radio Amateur Civil Emergency Services (RACES)

Federal Jurisdictions

Department of Energy (DOE)

United States Army Corps of Engineers (USACE)

United States Coast Guard (USCG)

United States Department of Agriculture

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## SECTION 2: EXERCISE DESIGN SUMMARY

### 2.1 Exercise Purpose and Design

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all off-site nuclear planning and response. FEMA's activities were conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March, 1979.

44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State, and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local government participation in joint exercises with licensees.

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

Taking the lead in offsite emergency planning and in the review and evaluation of Radiological Emergency Response Plans (RERPs) and procedures developed by State and local governments;

Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;

Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993); and coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:

- U.S. Department of Commerce,
- U.S. Nuclear Regulatory Commission,
- U.S. Environmental Protection Agency,
- U.S. Department of Energy,
- U.S. Department of Health and Human Services,

- 
- U.S. Department of Transportation,
  - U.S. Department of Agriculture,
  - U.S. Department of the Interior, and
  - U.S. Food and Drug Administration.

Representatives of these agencies serve on the Region III Radiological Assistance Committee (RAC), which is chaired by FEMA.

A Radiological emergency Preparedness (REP) exercise was conducted on May 22, 2012, to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving Salem/Hope Creek Nuclear Generating Stations (S/HCNCS). The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency. The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA Region III RAC Chairperson and approved by FEMA Headquarters. These reports are provided to the NRC and participating States. State and local governments utilize the findings contained in these reports for the purposes of planning, training, and improving emergency response capabilities.

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

NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980; "Radiological Emergency Preparedness Manual," April 2012;

Section 1 of this report, entitled "Exercise Overview", presents the "Exercise Planning Team" and the "Participating Organizations".

Section 2 of this report, entitled "Exercise Design Summary", and includes the "Purpose and Design", "Exercise Objectives, Capabilities, and Activities", and the "Scenario Summary".

Section 3 of this report, entitled "Analysis of Capabilities", presents detailed "Exercise Evaluation and Results" information on the demonstration for each jurisdiction or functional entity evaluated in a jurisdiction-based, issue-only format (Criteria Evaluation Summaries). This

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section also contains:

(1) descriptions of all Deficiencies and Areas Requiring Corrective Action (ARCA) assessed during this exercise, recommended corrective actions, State, and local governments' schedule of corrective actions for each identified exercise issue and

(2) descriptions of ARCAs assessed during previous exercises and resolved at this exercise, including the corrective action demonstrated, as well as ARCAs assessed during previous exercises and scheduled for demonstration at this exercise which remain unresolved.

Section 4 of this report, entitled "Conclusion" presents detailed information on the demonstration of applicable exercise evaluation areas at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format.

The final section of the report is comprised of the appendices, which present the following supplementary information: Best Practices, Exercise Timeline, Exercise Evaluators and Team Leaders List, Acronyms and Abbreviations, Exercise Plan and Improvement Plan.

#### Plume Emergency Planning Zone Description

The S/HCNGS site is located on the east bank of the Delaware River in Lower Alloways Creek Township, Salem County, New Jersey, about 18 miles south of Wilmington, Delaware. The 700-acre site is on the southern end of Artificial Island, a 3-mile-long, 1-mile-wide, man-made peninsula. The peninsula is connected to the mainland by a strip of tideland formed by hydraulic fill from dredging operations on the Delaware River. The tideland was constructed by the U.S. Army Corps of Engineers. The coordinates of the site are latitude 39°27'46" north and longitude 75°32'08" west. Two pressurized water reactors (Salem) and one boiling water reactor (Hope Creek) are located on the island. Each Salem unit generates a maximum output of 1,106 megawatts (MW); Unit 1 commenced commercial operations in June 1977 and Unit 2 in October 1981. The Hope Creek Unit, which generates a maximum output of 1,031 MW, became operational in December 1986.

The site lies on the low coastal plain of New Jersey, surrounded by extensive marshlands and meadowlands. The land within the two Delaware counties (New Castle and Kent) near the site is either undeveloped (48 percent) or used for agricultural purposes (42 percent). Major farm

products within a 25-mile radius of the site include vegetables, poultry, dairy products, and indigenous field crops.

In the State of Delaware, the five most populous incorporated places and their 2010 Census counts are Wilmington, 70,851; Dover, 36,047; Newark, 31,454; Middletown, 18,871; and Smyrna, 10,023. Wilmington decreased by 2.5 percent since the 2000 Census. Dover grew by 12.2 percent, Newark grew by 10.2 percent, Middletown grew by 206.3 percent, and Smyrna grew by 76.5 percent. There are 37 early warning sirens in the Delaware portion of the EPZ.

The largest county is New Castle, with a population of 538,479. Its population grew by 7.6 percent since 2000. The state's other counties are Sussex, with a population of 197,145 (increase of 25.9 percent); and Kent, 162,310 (increase of 28.1 percent).

## **2.2 Exercise Objectives, Capabilities and Activities**

The objective of the 2012 Salem/Hope Creek Nuclear Generating Stations (S/HCNGS) Plume Exercise was to demonstrate the capabilities of State and local emergency management agencies to mobilize emergency management and emergency response personnel, to activate emergency operations centers and support facilities, and to protect the health, lives, and property of the citizens residing within the 10 - mile Emergency Planning Zone (EPZ).

To demonstrate the ability to communicate between multiple levels of government and provide timely, accurate, and sufficiently detailed information to the public, the emergency management agencies use a variety of resources, including radios, telephones, the Internet, the media, the Emergency Alert System (EAS), and the utility Alert and Notification System sirens (ANS). All of these communication resources were employed and evaluated. The EAS and ANS were simulated and media information was prepared but not actually released.

An essential capability of the Radiological Emergency Preparedness Program (REPP) is to evacuate, monitor and decontaminate, if necessary, and provide temporary care and shelter to displaced residents from the EPZ. The ability of the risk/support counties to mobilize personnel and resources to establish reception, monitoring and decontamination, and mass care centers was demonstrated.

The protection of school children is also a vital mission of the REPP. School districts and

selected schools demonstrated the capability to communicate and coordinate the collection, evacuation, transportation and shelter of students attending schools within the EPZ. Provisions for students who live within the EPZ, but attend school outside were also evaluated.

## 2.3 Scenario Summary

All information below is scenario simulated. The times for the events are approximate as the NRC licensee's operations crew on the reactor training simulator will be provided opportunity for free play.

There are two Pressurized Water Reactors at the Salem Station and one Boiling Water Reactor at the Hope Creek Station. The Hope Creek Nuclear Plant is participating in the exercise.

At 1530, on May 22, 2012, the exercise starts in the Hope Creek Training Simulator control room. The wind speed is 12 miles per hour and the wind direction is from the East to the West. Initial conditions are that Hope Creek and Salem Unit 1 are at 100 % power, Salem Unit 2 is at 50 % power and increasing after coming out of a refueling outage. At 1535, a seismic event occurs. Control Room operators will recognize that an earthquake has occurred based on reports of damage on site. The magnitude of the earthquake is 0.15 g (about 6 on the Richter scale) and the epicenter is near Pennsville, New Jersey.

On or before 1550, the Shift Manager will declare an Alert under EAL HA 1.1, instrument readings confirm that the Operating Basis Earthquake level was exceeded, and the earthquake was confirmed by observations on site. For the purposes of the exercise it is assumed that a similar Alert is declared at the Salem site. Also, for the purposes of the exercise it is assumed that there is no damage to roads, bridges and transportation to and from the Salem/Hope Creek plant. Communications and data transmission systems are not affected.

At 1720, while performing a shutdown of Hope Creek an anticipated transient without automatic scram occurs. Also, operators observe that about half the control rods did not insert and the reactor power remains above 4 %.

On or before 1735, the Emergency Coordinator will declare a Site Area Emergency under EAL SS3.1, automatic scram failed to shut the reactor as indicated by power greater than 4 % and manual scram actions at the reactor control console failed. The wind speed is 10 miles per hour

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and the wind direction is from the South East to the North West. By 1745 all the Control Rods are verified as fully inserted and the reactor is shutdown.

At 1900, an earthquake after-shock causes a large break Loss of Coolant Accident. There are some failures of the emergency core cooling system and this causes the reactor water level to fall below the top of active reactor core. The reactor core remains partially covered.

On or before 1915, the Emergency Coordinator will declare a General Emergency under EAL FB1.L, RB1.L and CB1.P, loss of the fuel clad and the reactor coolant barrier, and a potential loss of the reactor containment. The expected PAR from Hope Creek, based on degrading plant conditions, will be to evacuate the 5 mile ring (in Delaware this is ERPA A and D), take potassium iodide and shelter the remainder of the EPZ. There are no releases in progress at this time. The wind speed is 8 miles per hour and the wind direction is from the South East to the North West. By 1930 operators are able to increase reactor coolant flow, so that the reactor core is covered.

At 2000, another after-shock occurs, opening a release pathway for radioactive material from the Reactor Containment Building (Drywell) into the Reactor Building and then out the Reactor Building Vent to the environment. There is now a loss of all three fission product barriers. The radioactive release is monitored and filtered. The wind speed is 8 miles per hour, the stability class is D and the wind is from the South East to the North West. The dose assessment team will determine that the EPA PAG for the adult thyroid is exceeded beyond 5 miles from the site. An upgraded PAR will be issued by Hope Creek for the evacuation of the 5 mile ring and out to 10 miles in the West North West, North West and North North West sectors. In Delaware this is ERPA A, C and D.

At 2145, a wind shift will occur towards New Jersey. The wind will blow from the South West to the North East. An updated PAR will be issued by Hope Creek to address the 5 to 10 mile area in the downwind sectors in New Jersey.

At 2245, the radioactive releases from the Reactor Containment into the Reactor Building will be stopped by the plant operators. However, the remaining inventory of radioactive material in the Reactor Building will continue to be released into the environment.

At 2300, the Lead Exercise Controller will terminate the exercise if the evaluators indicate that

the onsite and offsite objectives have been met.

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## SECTION 3: ANALYSIS OF CAPABILITIES

### 3.1 Exercise Evaluation and Results

The matrix presented in Table 3.1, on the following pages, presents the status of the exercise evaluation area criteria from the REP Exercise Evaluation Methodology that was scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise evaluation area criteria are listed by number and the demonstration status of the criteria is indicated by the use of the following letters:

(D) Deficiency: an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant.

(A) Area Requiring Corrective Action (ARCA): an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.

(P) Plan Issues: an observed or identified inadequacy in the ORO's emergency plan or implementing procedures, rather than in the ORO's performance. Plan Issues are not exercise issues and are required to be corrected through the revision of the appropriate plan or procedures during the next annual plan review and update, submitted for FEMA review, and reported in the State Annual Letter of Certification.

(N) Not Demonstrated: term applied to the states of a REP exercise Evaluation Area Criterion indicating that the ORO, for a justifiable reason, did not demonstrate the Evaluation Area Criterion, as required in the extent-of-play agreement or at the two-year or six-year interval required in the FEMA REP Program Manual.

(M) Met: state of a REP exercise Evaluation Area Criterion indicating that participating ORO demonstrated all demonstration criteria for the Evaluation Area Criterion to the level required in the extent-of-play agreement with no Deficiencies or ARCAs assessed in the current exercise and no unresolved prior ARCAs.

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## 3.2 Summary Results of Exercise Evaluation

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the May 22, 2012, biennial Plume Radiological Emergency Preparedness (REP) Exercise. Also included are the Out-of-Sequence demonstrations which were conducted on April 30, 2012 and May 1, 2012. The exercise was conducted to demonstrate the ability of State, County and local jurisdictional Offsite Response Organizations (ORO) to respond to radiological anomalies within the 10 mile Emergency Planning Zone (EPZ) associated with the Salem/Hope Creek Nuclear Generating Stations.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the Exercise Evaluation Area Criteria contained in the REP Exercise Evaluation Methodology. Detailed information on the exercise evaluation area criteria and the Extent-of-Play agreement are found in Appendix E.

Table 3.1 - Summary of Exercise Evaluation (2 pages)

| DATE: 2012-05-22<br>SITE: Salem/Hope Creek Nuclear Generating Stations, NJ<br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated |     | DEMA EOC | DE EOC TAC | SHC EOF | SFMT #1 | SFMT #2 | SHC ENC (NJ) | STAAC/DELDOT | KCo EOC | KCo BuRA | KCo MCC CRHS | KCo PCACS |
|--|-----|----------|------------|---------|---------|---------|--------------|--------------|---------|----------|--------------|-----------|
| <b>Emergency Operations Management</b>   |     |          |            |         |         |         |              |              |         |          |              |           |
| Mobilization   | 1a1 | M        | M          |         | M       | M       | M            |              | M       |          |              |           |
| Facilities   | 1b1 |          |            |         |         |         |              |              |         |          |              |           |
| Direction and Control  | 1c1 | M        |            |         |         |         |              |              | M       |          |              |           |
| Communications Equipment   | 1d1 | M        | M          | M       | M       | M       |              | M            | M       | M        |              |           |
| Equipment and Supplies to Support Operations   | 1e1 | M        | M          | M       | M       | M       |              | M            | M       | M        |              |           |
| <b>Protective Action Decision Making</b>   |     |          |            |         |         |         |              |              |         |          |              |           |
| Emergency Worker Exposure Control  | 2a1 |          | M          |         |         |         |              |              |         |          |              |           |
| Dose Assessment & PARs & PADs for the Emergency Event  | 2b1 | M        | M          |         |         |         |              |              |         |          |              |           |
| Dose Assessment & PARs & PADs for the Emergency Event  | 2b2 | M        | M          |         |         |         |              |              |         |          |              |           |
| PADs for disabilities & access/functional needs people   | 2c1 | M        |            |         |         |         |              |              |         |          |              |           |
| Radiological Assessment & Decision-making for Ingestion Pathway  | 2d1 |          |            |         |         |         |              |              |         |          |              |           |
| Radiological Assessment & Decision-making for Relocation/Reentry/Return  | 2e1 |          |            |         |         |         |              |              |         |          |              |           |
| <b>Protective Action Implementation</b>  |     |          |            |         |         |         |              |              |         |          |              |           |
| Implementation of Emergency Worker Exposure Control  | 3a1 |          |            | M       | M       | M       |              | M            |         | M        |              |           |
| Implementation of KI PAD for Institutionalized Individuals/Public  | 3b1 |          |            |         |         |         |              |              |         |          |              |           |
| Implementation of PADs for disabilities & access/functional needs people   | 3c1 | M        |            |         |         |         |              |              | M       |          |              |           |
| Implementation of PADs for Schools   | 3c2 | M        |            |         |         |         |              |              |         |          |              | M         |
| Implementation of Traffic & Access Control   | 3d1 | M        |            |         |         |         |              | M            |         |          |              |           |
| Impediments to Evacuation  | 3d2 | M        |            |         |         |         |              | M            |         |          |              |           |
| Availability & use of Commodity & Resource Information   | 3e1 |          |            |         |         |         |              |              |         |          |              |           |
| Preprinted Materials for Implementing PADs for Commodities & Resources   | 3e2 |          |            |         |         |         |              |              |         |          |              |           |
| Implementation of Relocation/Reentry/Return Decisions  | 3f1 |          |            |         |         |         |              |              |         |          |              |           |
| <b>Field Measurement and Analysis</b>  |     |          |            |         |         |         |              |              |         |          |              |           |
| RESERVED   | 4a1 |          |            |         |         |         |              |              |         |          |              |           |
| Plume Phase Field Measurement & Analyses   | 4a2 |          | M          |         |         |         |              |              |         |          |              |           |
| Plume Phase Field Measurement & Analyses   | 4a3 |          |            |         | M       | M       |              |              |         |          |              |           |
| Post Plume Phase Field Measurements & Sampling   | 4b1 |          |            |         |         |         |              |              |         |          |              |           |
| Laboratory Operations  | 4c1 |          |            |         |         |         |              |              |         |          |              |           |
| <b>Emergency Notification and Public Info</b>  |     |          |            |         |         |         |              |              |         |          |              |           |
| Activation of the Prompt Alert & Notification System   | 5a1 | M        |            |         |         |         |              |              |         | M        |              |           |
| RESERVED   | 5a2 |          |            |         |         |         |              |              |         |          |              |           |
| Activation of the Back-up ANS  | 5a3 | M        |            |         |         |         |              |              | M       | M        |              |           |
| Activation of the Exception Area ANS   | 5a4 |          |            |         |         |         |              |              |         |          |              |           |
| Emergency Information & Instructions for the Public/Media  | 5b1 | M        |            |         |         |         | M            |              |         |          |              |           |
| <b>Support Operations/Facilities</b>   |     |          |            |         |         |         |              |              |         |          |              |           |
| Monitoring, Decontamination, & Registration of Evacuees  | 6a1 |          |            |         |         |         |              |              |         |          |              |           |
| Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles   | 6b1 |          |            |         |         |         |              |              |         |          |              |           |
| Temporary Care of Evacuees   | 6c1 |          |            |         |         |         |              |              |         |          | M            |           |
| Transportation/Treatment of Contaminated Injured Individuals   | 6d1 |          |            |         |         |         |              |              |         |          |              |           |

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

| DATE: 2012-05-22<br>SITE: Salem/Hope Creek Nuclear Generating Stations, NJ<br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated |     | NCC EOC | NCC BuRA | NCC RC SRC DNG | NCC MCC MPH S | ASD NCC | NCC ASD APHS | NCC ASD RMS | NCC CSD | NCC CSD SES | NCC MOTCS |
|--|-----|---------|----------|----------------|---------------|---------|--------------|-------------|---------|-------------|-----------|
| <b>Emergency Operations Management</b>   |     |         |          |                |               |         |              |             |         |             |           |
| Mobilization   | 1a1 | M       |          |                |               |         |              |             |         |             |           |
| Facilities   | 1b1 |         |          | M              |               |         |              |             |         |             |           |
| Direction and Control  | 1c1 | M       |          |                |               |         |              |             |         |             |           |
| Communications Equipment   | 1d1 | M       | M        | M              |               |         |              |             |         |             |           |
| Equipment and Supplies to Support Operations   | 1e1 | M       | M        | M              |               |         |              |             |         |             |           |
| <b>Protective Action Decision Making</b>   |     |         |          |                |               |         |              |             |         |             |           |
| Emergency Worker Exposure Control  | 2a1 |         |          |                |               |         |              |             |         |             |           |
| Dose Assessment & PARs & PADs for the Emergency Event  | 2b1 |         |          |                |               |         |              |             |         |             |           |
| Dose Assessment & PARs & PADs for the Emergency Event  | 2b2 |         |          |                |               |         |              |             |         |             |           |
| PADs for disabilities & access/functional needs people   | 2c1 |         |          |                |               |         |              |             |         |             |           |
| Radiological Assessment & Decision-making for Ingestion Pathway  | 2d1 |         |          |                |               |         |              |             |         |             |           |
| Radiological Assessment & Decision-making for Relocation/Reentry/Return  | 2e1 |         |          |                |               |         |              |             |         |             |           |
| <b>Protective Action Implementation</b>  |     |         |          |                |               |         |              |             |         |             |           |
| Implementation of Emergency Worker Exposure Control  | 3a1 |         | M        | M              |               |         |              |             |         |             |           |
| Implementation of KI PAD for Institutionalized Individuals/Public  | 3b1 |         |          |                |               |         |              |             |         |             |           |
| Implementation of PADs for disabilities & access/functional needs people   | 3c1 | M       |          |                |               |         |              |             |         |             |           |
| Implementation of PADs for Schools   | 3c2 |         |          |                |               | M       | M            | M           | M       | M           | M         |
| Implementation of Traffic & Access Control   | 3d1 |         |          |                |               |         |              |             |         |             |           |
| Impediments to Evacuation  | 3d2 |         |          |                |               |         |              |             |         |             |           |
| Availability & use of Commodity & Resource Information   | 3e1 |         |          |                |               |         |              |             |         |             |           |
| Preprinted Materials for Implementing PADs for Commodities & Resources   | 3e2 |         |          |                |               |         |              |             |         |             |           |
| Implementation of Relocation/Reentry/Return Decisions  | 3f1 |         |          |                |               |         |              |             |         |             |           |
| <b>Field Measurement and Analysis</b>  |     |         |          |                |               |         |              |             |         |             |           |
| RESERVED   | 4a1 |         |          |                |               |         |              |             |         |             |           |
| Plume Phase Field Measurement & Analyses   | 4a2 |         |          |                |               |         |              |             |         |             |           |
| Plume Phase Field Measurement & Analyses   | 4a3 |         |          |                |               |         |              |             |         |             |           |
| Post Plume Phase Field Measurements & Sampling   | 4b1 |         |          |                |               |         |              |             |         |             |           |
| Laboratory Operations  | 4c1 |         |          |                |               |         |              |             |         |             |           |
| <b>Emergency Notification and Public Info</b>  |     |         |          |                |               |         |              |             |         |             |           |
| Activation of the Prompt Alert & Notification System   | 5a1 |         |          |                |               |         |              |             |         |             |           |
| RESERVED   | 5a2 |         |          |                |               |         |              |             |         |             |           |
| Activation of the Back-up ANS  | 5a3 | M       | M        |                |               |         |              |             |         |             |           |
| Activation of the Exception Area ANS   | 5a4 |         |          |                |               |         |              |             |         |             |           |
| Emergency Information & Instructions for the Public/Media  | 5b1 |         |          |                |               |         |              |             |         |             |           |
| <b>Support Operations/Facilities</b>   |     |         |          |                |               |         |              |             |         |             |           |
| Monitoring, Decontamination, & Registration of Evacuees  | 6a1 |         |          | M              |               |         |              |             |         |             |           |
| Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles   | 6b1 |         |          |                |               |         |              |             |         |             |           |
| Temporary Care of Evacuees   | 6c1 |         |          |                | M             |         |              |             |         |             |           |
| Transportation/Treatment of Contaminated Injured Individuals   | 6d1 |         |          |                |               |         |              |             |         |             |           |

### 3.3 Criteria Evaluation Summaries

#### 3.3.1 Delaware Jurisdictions

##### 3.3.1.1 Delaware Emergency Operations Center

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

##### 3.3.1.2 Delaware Emergency Operations Center, Technical Assessment Center

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

##### 3.3.1.3 Salem/Hope Creek Emergency Operations Facility

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

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

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

#### 3.3.1.4 State Field Monitoring Team #1

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. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: 1.e.1.

ISSUE NO.: 02-12-1e1-P-02

CRITERION: Equipment, maps, displays, dosimetry, KI, and other supplies are sufficient to support emergency operations.

CONDITION: Step 5.12 in SOP 306, Attachment SOP 306-B does not specify what hand held instrument to use during the contamination survey on field team equipment.

POSSIBLE CAUSE: Plan/Procedure inadequacy

REFERENCE: NUREG-0654, H.7, I.7, I.8 and Delaware SOP 306, Rev. 12, February 2012.

EFFECT: Not using the ADM-300 with the BP-100 pancake probe could result in inadequate decontamination of the field monitoring sampling equipment.

CORRECTIVE ACTION DEMONSTRATED: Delaware sent the corrected SOP 306 to the Region on June 4, 2012, so this issue is corrected and closed.

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

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### 3.3.1.5 State Field Monitoring Team #2

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. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: 1.e.1.

ISSUE NO.: 02-12-1e1-P-03

CRITERION: Equipment, maps, displays, dosimetry, KI, and other supplies are sufficient to support emergency operations.

CONDITION: Step 5.12 in SOP 306, Attachment SOP 306-B does not specify what hand held instrument to use during the contamination survey on field team equipment.

POSSIBLE CAUSE: Plan/Procedure inadequacy.

REFERENCE: NUREG-0654, H.7, I.7, I.8 and Delaware SOP 306, Rev. 12, February 2012.

EFFECT: Not using the ADM-300 with the BP-100 pancake probe could result in inadequate decontamination of the field monitoring sampling equipment.

CORRECTIVE ACTION DEMONSTRATED: Delaware sent the corrected SOP 306 to the Region on June 4, 2012, so this issue is corrected and closed.

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

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### 3.3.1.6 Salem/Hope Creek Emergency News Center, Woodstown, NJ

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

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

### 3.3.1.7 State Traffic and Access Control, Delaware Department of Transportation

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

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

## 3.3.2 Risk Jurisdictions

### 3.3.2.1 Kent County Emergency Operations Center

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

### **3.3.2.2 Kent County, Back-up Route Alerting**

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

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

### **3.3.2.3 Kent County Mass Care Center, Caesar Rodney High School**

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

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

### **3.3.2.4 Kent County, Providence Creek Academy Charter School**

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

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

### 3.3.2.5 New Castle County Emergency Operations Center

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

### 3.3.2.6 New Castle County, Back-up Route Alerting

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

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

### 3.3.2.7 New Castle County Reception Center, Stern Readiness Center, DE National Guard

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

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

ISSUE NO.: 02-12-1e1-A-04

CRITERION: Equipment, maps, displays, dosimetry, KI, and other supplies are sufficient to support emergency operations.

CONDITION: The handheld instrumentation used for contamination monitoring did not have a sticker on the instrument identifying a range of values for the source check.

POSSIBLE CAUSE: Lack of training, not familiar with requirements.

REFERENCE: NUREG-0654, H.7, 10; J.10.a, b, e; J.11; K.3.a.

EFFECT: Instrument may be used when not operating correctly. May cause individuals or vehicles with contamination to not be detected.

CORRECTIVE ACTION DEMONSTRATED: On May 22, 2012 this was successfully re-demonstrated at the Delaware State Emergency Operations Center. The instruments had the correct source range sticker on the side of each instrument. Procedures were modified to initially establish this range and perform source checks in accordance with demonstration criteria.

ISSUE NO.: 02-12-1e1-A-05

CRITERION: Equipment, maps, displays, dosimetry, KI, and other supplies are sufficient to support emergency operations.

CONDITION: Portal Monitor used for individuals was incorrectly source checked on the foot detectors by using a source stronger than that identified in REP-21.

POSSIBLE CAUSE: Lack of training

REFERENCE: (NUREG-0654, H.7, 10; J.10.a, b, e; J.11; K.3.a.), REP-21

EFFECT: Portal monitor may not have detected necessary level of contamination.

CORRECTIVE ACTION DEMONSTRATED: The matting placed on the foot detector area was removed, and then source checked using a 1 uci Cs-137 source in accordance with REP-21 and successfully passed the source check.

ISSUE NO.: 02-12-6a1-A-06

**CRITERION:** The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees.

**CONDITION:** The staff at the Stern Readiness Center did not comply with procedures that require them to wait to decontaminate a vehicle's exterior until the individual coming from the vehicle is identified as non-contaminated and then the vehicle interior is surveyed.

**POSSIBLE CAUSE:** Failure to comply with plans and procedure

**REFERENCE:** (NUREG-0654, J.10.h; J.12; K.5.a) DE SOP 1300, 802

**EFFECT:** Vehicle interior may be contaminated and Emergency Workers and owner would not be aware of the contamination.

**CORRECTIVE ACTION DEMONSTRATED:** The controller stopped the vehicle monitoring process and retrained the Emergency Workers. The workers then verified the individuals from the vehicle were not contaminated, performed an interior vehicle survey and proceeded with vehicle exterior decontamination in accordance with plans and procedures.

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

### **3.3.2.8 New Castle County Mass Care Center, Mount Pleasant High School**

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

- a. MET: 6.c.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None

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

### 3.3.2.9 New Castle County, Appoquinimink School District

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

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

### 3.3.2.10 New Castle County, Appoquinimink School District, Appoquinimink High School

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

- a. MET: 3.c.2.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: 3.c.2.

ISSUE NO.: 02-12-3c2-P-01

CRITERION: OROs/school officials implement protective actions for schools.

CONDITION: The School Plan did not include provisions for students who reside in the EPZ.

POSSIBLE CAUSE: The Appoquinimink High School had not developed a specific list containing the names of those students who resided within the 10-mile EPZ.

REFERENCE: NUREG -0654/FEMA-REP-1,J.10.C.,D,E,G

EFFECT: Students who live within the 10 mile EPZ might not be held pending retrieval by a parent or guardian when other students were released.

CORRECTIVE ACTION DEMONSTRATED: On May 21, 2012, the Appoquinimink High School administration provided a list of 444 students who reside within the plume EPZ. It is now clearly documented which students should be held at the school until picked up by a parent or guardian.

In addition, the Delaware Emergency Management Agency has amended SOP 1100 of the Delaware Radiological Emergency Plan to reflect the requirement for all schools outside the S/HCNGS EPZ, but with students residing inside the EPZ, to develop a list.

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

#### **3.3.2.11 New Castle County, Appoquinimink School District, Redding Middle School**

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

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

#### **3.3.2.12 New Castle County, Colonial School District**

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

- a. MET: 3.c.2.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None

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

### **3.3.2.13 New Castle County, Colonial School District, Southern Elementary School**

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

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

### **3.3.2.14 New Castle County, MOT Charter School**

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

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

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## SECTION 4: CONCLUSION

The State of Delaware and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. No Deficiency was identified as a result of this exercise; during the Out of Sequence Exercise, there were no Deficiencies. Three Areas Requiring Corrective Action (ARCA) were identified and all three issues were re-demonstrated successfully. One Planning Issue was identified and was successfully corrected on May 21, 2012.

During the Plume Exercise, one planning issue applying to both Field Monitoring Teams was identified and was successfully corrected on June 4, 2012.

In summary, the 2012 Salem/Hope Creek Nuclear Generating Stations exercise resulted in no outstanding issues.

Also, there were no outstanding ARCA or Planning Issues from previous exercises.

## APPENDIX A: BEST PRACTICES

### 1. Best Practices

#### Summary: State of Delaware

##### Delaware Emergency Operations Center

- Maintains an exceptional program for Management of Special Populations through annual home visits and phone calls.

##### Delaware Emergency Operations Center, Technical Assessment Center

- Very knowledgeable staff and superb teamwork and leadership

##### New Castle County Emergency Operations Center

- The EOC Director's briefings were frequent and comprehensive, allowing for staff feedback whenever necessary.

**Description:** The State of Delaware maintains an exceptional Radiological Emergency Preparedness Program.

## APPENDIX B: EXERCISE TIMELINE

Table 1 - Exercise Timeline

DATE: 2012-05-22, SITE: Salem/Hope Creek Nuclear Generating Stations, NJ

| Emergency Classification Level or Event   | Time Utility Declared | DEMA EOC | DEEOC TAC | SHC EOP | SHC ENC (NJ) | KCo EOC | NCC EOC |
|---|-----------------------|----------|-----------|---------|--------------|---------|---------|
| Unusual Event   | N/A                   | N/A      | N/A       | N/A     | N/A          | N/A     | N/A     |
| Alert   | 1541                  | 1548     | 1548      | 1626    | 1548         | 1620    | 1604    |
| Site Area Emergency   | 1729                  | 1735     | 1748      | 1734    | 1735         | 1742    | 1745    |
| General Emergency   | 1912                  | 1918     | 1918      | 1917    | 1918         | 1925    | 1925    |
| Simulated Rad. Release Started  | 2012                  | 2016     | 2025      | 2001    | 2016         | 2227    | 2026    |
| Simulated Rad. Release Terminated   | N/A                   | N/A      | N/A       | N/A     | N/A          | N/A     | N/A     |
| Facility Declared Operational   |                       | 1600     | 1622      | 1720    | 1600         | 1620    | 1630    |
| Declaration of State of Emergency   |                       | 1800     | 1800      | 1800    | 1800         | 1800    | 1955    |
| Exercise Terminated   |                       | 2230     | 2230      | N/A     | 2230         | 2228    | 2225    |
| 1st Protective Action Decision:<br>Shelter: Schools and Special Populations<br>Place animals on stored food and water |                       | 1803     | 1803      | 1803    | 1803         | 1803    | 1803    |
| 1st Siren Activation  |                       | 1815     | 1815      | 1815    | 1815         | 1815    | 1815    |
| 1st EAS or EBS Message  |                       | 1820     | 1820      | 1820    | 1820         | 1820    | 1820    |
| 2nd Protective Action Decision:<br>Shelter ERPAs: A and C   |                       | 1940     | 1940      | 1940    | 1940         | 1940    | 1940    |
| 2nd Siren Activation  |                       | 1950     | 1950      | 1950    | 1950         | 1950    | 1950    |
| 2nd EAS or EBS Message  |                       | 1955     | 1955      | 1955    | 1955         | 1955    | 1955    |
| 3rd Protective Action Decision:<br>Shelter ERPA: B<br>Evacuate ERPAs: A and C   |                       | 2053     | 2053      | 2053    | 2053         | 2053    | 2053    |
| 3rd Siren Activation  |                       | 2105     | 2105      | 2105    | 2105         | 2105    | 2105    |
| 3rd EAS or EBS Message  |                       | 2110     | 2110      | 2110    | 2110         | 2110    | 2110    |
| 4th Protective Action Decision:   |                       | 2225     | 2225      | N/A     | 2225         | N/A     | N/A     |
| 4th Siren Activation  |                       | 2237     | 2237      | N/A     | 2237         | N/A     | N/A     |
| 4th EAS or EBS Message  |                       | 2242     | 2242      | N/A     | 2242         | N/A     | N/A     |
| KI Administration Decision: Emergency<br>Workers and general public advised not to take<br>KI                         |                       | 1940     | 1940      | 1940    | 1940         | 1940    | 1940    |
| KI Administration Decision: Emergency<br>Workers and general public advised to take KI in<br>all ERPAs                |                       | 2053     | 2053      | 2053    | 2053         | 2053    | 2053    |

## APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

DATE: 2012-05-22, SITE: Salem/Hope Creek Nuclear Generating Stations, NJ

| LOCATION  | EVALUATOR   | AGENCY   |
|---|---|--|
| Delaware Emergency Operations Center  | Barton Freeman<br>*Joseph Suders<br>Lee Torres<br>Bill Webb | FEMA RIII<br>FEMA RIII<br>FEMA RIII<br>FEMA RX |
| Delaware Emergency Operations Center, Technical Assessment Center             | *Martin Vyeniolo  | FEMA RIII                                      |
| Salem/Hope Creek Emergency Operations Facility                                | Michael Shuler  | FEMA RIII                                      |
| State Field Monitoring Team #1  | Reggie Rodgers  | ICFI   |
| State Field Monitoring Team #2  | Johanna Berkey  | FEMA RX  |
| Salem/Hope Creek Emergency News Center, Woodstown, NJ                         | Robert Neff   | FEMA RIII                                      |
| State Traffic and Access Control, Delaware Department of Transportation       | Steve Marshall  | FEMA HQ  |
| Kent County Emergency Operations Center                                       | Roger Kowieski<br>Daniel Lerch<br>*John Price               | ICFI<br>FEMA RIII<br>FEMA RIII                 |
| Kent County, Back-up Route Alerting   | James King  | FEMA RV  |
| Kent County Mass Care Center, Caesar Rodney High School                       | *Joseph Suders  | FEMA RIII                                      |
| Kent County, Providence Creek Academy Charter School                          | Michael Shuler  | FEMA RIII                                      |
| New Castle County Emergency Operations Center                                 | David Jeremy<br>*Richard Kinard<br>Matthew Wiedemer         | FEMA HQ<br>FEMA RIII<br>FEMA RIII              |
| New Castle County, Back-up Route Alerting                                     | Bridget Ahlgrim   | FEMA HQ  |
| New Castle County Reception Center, Stern Readiness Center, DE National Guard | *Martin Vyeniolo  | FEMA RIII                                      |
| New Castle County Mass Care Center, Mount Pleasant High School                | *Joseph Suders  | FEMA RIII                                      |
| New Castle County, Appoquinimink School District                              | Daniel Lerch  | FEMA RIII                                      |
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| New Castle County, MOT Charter School   | Tina Lai-Thomas   | FEMA RIII                                      |
| * Team Leader   |   |  |

## APPENDIX D: ACRONYMS AND ABBREVIATIONS

| Acronym | Meaning                                       |
|---------|---|
| ARCA    | Area Requiring Corrective Action              |
| CAP     | Civil Air Patrol                              |
| CHFC    | Citizens Hose Fire Company                    |
| DEMA    | Delaware Emergency Management Agency          |
| DEMAD   | Delaware Emergency Management Agency Director |
| DENS    | Delaware Emergency Notification System        |
| DFCC    | Delaware Fire Command Center                  |
| DNG     | Delaware National Guard                       |
| DSEOC   | Delaware State Emergency Operations Center    |
| DSP     | Delaware State Police                         |
| EAS     | Emergency Alert System                        |
| ECL     | Emergency Classification Level                |
| EMS     | Emergency Medical Services                    |
| EOC     | Emergency Operations Center                   |
| EOF     | Emergency Operations Facility                 |
| EPC     | Emergency Preparedness Coordinators           |
| EPZ     | Emergency Planning Zone                       |
| ERM     | Emergency Response Manager                    |
| FEMA    | Federal Emergency Management Agency           |
| FMC     | Field Monitoring Coordinator                  |
| GE      | General Emergency                             |
| JIC     | Joint Information Center                      |
| KCECC   | Kent County Emergency Communications Center   |
| KCEM    | Kent County Emergency Management              |
| KCEOC   | Kent County Emergency Operations Center       |
| NCC     | New Castle County                             |
| NETS    | Nuclear Event Transmission System             |
| NRC     | Nuclear Regulatory Commission                 |
| PA      | Public Address                                |
| PAD     | Protective Action Decision                    |
| PAR     | Protective Action Recommendation              |
| PPE     | Personal Protective Equipment                 |
| PRD     | Personal Record Dosimeter                     |
| RAC     | Radiological Assistance Committee             |

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After Action Report/Improvement Plan

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|         |  |
|---------|--|
| RACES   | Radio Amateur Civil Emergency Services       |
| REMV    | Radiological Emergency Monitoring Vehicle    |
| REP     | Radiological Emergency Preparedness          |
| S/HCNGS | Salem/Hope Creek Nuclear Generating Stations |
| SAE     | Site Area Emergency                          |
| SEOC    | State Emergency Operations Center            |
| SOP     | Standard Operating Procedures                |
| TAC     | Technical Assessment Center                  |
| TL      | Team Lead                                    |
| TVFC    | Townsend Volunteer Fire Company              |
| USCG    | United States Coast Guard                    |

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## APPENDIX E: EXERCISE PLAN

The enclosed Exercise Plan was created as an overall tool for facilitation and implementation of the 2012 Salem/Hope Creek Nuclear Generating Stations Plume Exercise and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program with the Radiological Emergency Preparedness Program Exercise Methodology. The Exercise Plan was originally drafted and published by the Delaware Emergency Management Agency (DEMA) as an independent document and is annexed here.

The "2012 Salem/Hope Creek Nuclear Generating Stations Extent of Play Radiological Emergency Preparedness Exercise" was negotiated and agreed upon by FEMA Region III, DEMA, and the Emergency Management Agencies of the Risk Counties. It is included as an Appendix of the Exercise Plan.

# EXERCISE PLAN

STATE OF DELAWARE

2012 SALEM/HOPE CREEK NUCLEAR GENERATING STATIONS

U.S. DEPARTMENT OF HOMELAND SECURITY



**FEMA**

FEMA EVALUATED RADIOLOGICAL EMERGENCY  
PREPAREDNESS EXERCISE

EXERCISE DATE: MAY 22, 2012

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Salem/Hope Creek Nuclear Generating Stations

## Preface

The 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise (FSE) is sponsored by the Delaware Emergency Management Agency. This Exercise Plan (ExPlan) was produced with input, advice, and assistance from the Exercise Planning Team (EPT), which followed the guidance set forth in the Federal Emergency Management Agency (FEMA), Homeland Security Exercise and Evaluation Program (HSEEP).

The ExPlan gives officials, observers, media personnel, and players from participating organizations the information necessary to observe or participate in a nuclear power plant accident response exercise focusing on participants' emergency response plans, policies, and procedures as they pertain to this type of event. The information in this document is current as of the date of publication and is subject to change as dictated by the EPT.

The 2012 Salem/Hope Creek Nuclear Generating Stations is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, Controllers, and Evaluators, but Players may view other materials deemed necessary to their performance. The ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbook is a restricted document intended for Controllers and Evaluators only.*

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and to protect this material in accordance with current jurisdictional directives. Public release of exercise materials to third parties is at the discretion of DHS and the EPT.

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## HANDLING INSTRUCTIONS

1. 2012 Salem/Hope Creek Nuclear Generating Stations Exercise Plan (ExPlan).
2. The information gathered in this ExPlan should be handled as sensitive information not to be disclosed. This document should be safeguarded, handled, transmitted, and stored in accordance with appropriate security directives. Reproduction of this document, in whole or in part, without prior approval from DEMA is prohibited.
3. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, stored in an area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.
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## CHAPTER 1: GENERAL INFORMATION

### Introduction

The 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise is a full-scale exercise (FSE) designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to Nuclear Power Plant accidents. An FSE is a complex event that requires detailed planning. To conduct an effective exercise, subject matter experts (SMEs) and local representatives from numerous agencies have taken part in the planning process and will take part in exercise conduct and evaluation.

This Exercise Plan (ExPlan) was produced at the direction of the Delaware Emergency Management Agency (DEMA) with the input, advice, and assistance of the EPT. The Hope Creek Unit is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities face.

### Confidentiality

The 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials deemed necessary to their performance. This ExPlan may be viewed by all exercise participants, *but the Controller/Evaluator (C/E) Handbook is a restricted document intended for controllers and evaluators only.*

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and protect this material in accordance with current DEMA directives.

Public release of exercise materials to third parties is at the discretion of the Federal Emergency Management Agency (FEMA) and the Exercise Planning Team (EPT).

### Purpose

The purpose of this exercise is to evaluate player actions against current response plans and capabilities for a nuclear power plant-related incident, and to comply with the requirements of 44 CFR 350 and the guidelines of NUREG 0654/FEMA-REP-1. Exercise planners utilized the elements described in the 67 FR 20580 (April 25, 2002) and Radiological Emergency Preparedness (REP) Program Manual (April 2012) to develop this exercise.

The objective of the State of Delaware and Public Service Electric and Gas (PSE&G) Company is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

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## Target Capabilities

The establishment of the National Preparedness Priorities have steered the focus of homeland security toward a capabilities-based planning approach. Capabilities-based planning focuses on planning under uncertainty, since the next danger or disaster can never be forecast with complete accuracy. Therefore, capabilities-based planning takes an all-hazards approach to planning and preparation, which builds capabilities that can be applied to a wide variety of incidents. States and Urban Areas use capabilities-based planning to identify a baseline assessment of their homeland security efforts by comparing their current capabilities against the Target Capabilities List (TCL) and the critical tasks of the Universal Task List (UTL). This approach identifies gaps in current capabilities and focuses efforts on identifying and developing priority capabilities and tasks for the jurisdiction. These priority capabilities are articulated in the jurisdiction's homeland security strategy and Multi-Year Training and Exercise Plan (TEP), of which this exercise is a component.

The capabilities listed below have been selected by the EPT planning team from the priority capabilities identified in Delaware Multi-Year TEP. These capabilities provide the foundation for development of the exercise objectives and scenario, as the purpose of this exercise is to measure and validate performance of these capabilities and their associated critical tasks.

- Citizen Evacuation and Shelter-in-Place.
- Emergency Operations Center Management,
- Emergency Public Information and Warning,
- Emergency Public Safety and Security Response,
- Mass Care (Sheltering, Feeding, and Related Services),
- Weapons of Mass Destruction (WMD) and Hazardous Materials (HazMat) Response and Decontamination,
- Emergency Triage and Pre-Hospital Treatment (Medical Services (MS-1) only), and
- Laboratory Testing (if being evaluated)

## Exercise Objectives

The EPT selected objectives that focus on evaluating emergency response procedures, identifying areas for improvement, and achieving a collaborative attitude. The Extent-of-Play lists the exercise objectives and is attached as an appendix to this Exercise Plan.

## Outstanding Issues

There is no Areas Requiring Corrective Action (ARCAs) as a result of previous FEMA-evaluated plume-phase exercises.

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## CHAPTER 2: EXERCISE LOGISTICS

### Exercise Summary

#### General

The 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise is designed to establish a learning environment for players to exercise their plans and procedures for responding to an incident at a Nuclear Power Plant. The 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise will be conducted on May 22, 2012. Exercise play is scheduled for approximately eight hours or until the Lead Controller and Lead FEMA Evaluator determine that the exercise objectives have been met at each venue.

#### Assumptions

Assumptions constitute the implied factual foundation for the exercise and, hence, are assumed to be present before the start of the exercise. The following general assumptions apply to the 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise:

- The exercise will be graded against the REP criteria. Elements outside the scope of the REP criteria will not be graded.
- This exercise will be conducted in a no-fault learning environment wherein systems and processes, not individuals, will be evaluated.
- Exercise simulation will be realistic and plausible, containing sufficient detail from which to respond.
- Exercise players will react to the information and situations as they are presented, in the same manner as if this had been a real event.

#### Constructs and Constraints

Constructs are exercise devices designed to enhance or improve exercise realism. Alternatively, constraints are exercise limitations that may detract from exercise realism. Constraints may be the inadvertent result of a faulty construct or may pertain to financial and staffing issues. Although there are a number of constructs and constraints (also known as exercise artificialities) for any exercise, the EPT recognizes and accepts the following as necessary:

- Exercise communication and coordination will be limited to the participating exercise venues and the Simulation Cell (SimCell).
- Only those communication methods listed in the Communication Directory will be available for players to use during the exercise.

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- Out-of-Sequence play is allowed.
- Certain simulations are allowed.

The participating agencies may need to balance exercise play with real-world emergencies. It is understood that real-world emergencies will take priority.

### Exercise Participants

The following are the categories of participants involved in this exercise; note that the term "participant" refers to all categories listed below, not just those playing in the exercise:

- *Players.* Players are agency personnel who have an active role in responding to the simulated emergency and perform their regular roles and responsibilities during the exercise. Players initiate actions that will respond to and mitigate the simulated emergency.
- *Controllers.* Controllers set up and operate the exercise site; plan and manage exercise play; act in the roles of response individuals and agencies not playing in the exercise. Controllers direct the pace of exercise play and routinely include members from the exercise planning team. They provide key data to players and may or initiate certain player actions to ensure exercise continuity.
- *Simulators.* Simulators are control staff personnel who role-play as nonparticipating organizations or individuals. They most often operate out of the SimCell, but may occasionally have face-to-face contact with players. Simulators function semi-independently under the supervision of SimCell controllers, enacting roles (e.g., as media reporters or next of kin) in accordance with instructions provided in the Master Scenario Events List (MSEL). All simulators are ultimately accountable to the Exercise Director and/or the Senior Controller.
- *Evaluators.* Evaluators are chosen to evaluate and provide feedback on a designated functional area of the exercise. They are chosen based on their expertise in the functional area(s) they have been assigned to review during the exercise and their familiarity with local emergency response procedures. Evaluators assess and document participants' performance against established emergency plans and exercise evaluation criteria, in accordance with Homeland Security Exercise and Evaluation Program (HSEEP) standards and within the bounds of REP Program guidance and regulations. They are typically chosen from amongst planning committee members or the agencies/organizations that are participating in the exercise. FEMA Evaluators will not serve as Controllers.
- *Actors.* Actors are exercise participants who act or simulate specific roles during exercise play. They are typically volunteers who have been recruited to play the role of victims or other bystanders.

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- *Observers.* Observers visit or view selected segments of the exercise. Observers do not play in the exercise, and do not perform any control or evaluation functions. Observers will view the exercise from a designated observation area and will be asked to remain within the observation area during the exercise. VIPs are a type of observer, but are frequently grouped separately. A dedicated group of exercise Controllers should be assigned to manage these groups.
- *Media Personnel.* Some media personnel may be present as observers pending approval by the appropriate emergency management agency personnel and exercise support team members. Media interaction may also be simulated by the SimCell to enhance realism and meet related exercise objectives. A dedicated group of exercise controllers should be assigned to manage these groups.
- *Support Staff.* Exercise support staff includes individuals who are assigned administrative and logistical support tasks during the exercise (i.e. registration, catering, etc.)

## Exercise Tools

### Controller Handbook

The 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise Controller/Evaluator Handbook is designed to help exercise Controllers and Evaluators conduct and evaluate an effective exercise. This Handbook also enables Controllers and Evaluators to understand their roles and responsibilities in exercise execution and evaluation. Should a Player, Observer, or media representative find an unattended Handbook, it should be provided to the nearest Controller or Evaluator.

### Master Scenario Events List (MSEL)

The MSEL outlines benchmarks, as well as injects that drive exercise play. It also details realistic input to the exercise players as well as information expected to emanate from simulated organizations (i.e., those nonparticipating organizations, agencies, and individuals who would usually respond to the situation). An inject will include several items of information, such as inject time, intended recipient, responsible controller, inject type, a short description of the event, and the expected player action.

The MSEL for the Hope Creek Unit Evaluated Full Scale Exercise will be provided to the appropriate personnel as a separate document.

## Exercise Implementation

### Exercise Play

Exercise play will begin at approximately 1600 with a notification from the licensee to the 24

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hour contact point. Play will proceed according to the events outlined in the MSEL, in accordance with established plans and procedures. Exercise play is scheduled for approximately eight hours or until the Lead Controller and Lead FEMA Evaluator determine that the exercise objectives have been met at each venue.

## Exercise Rules

The following are the general rules that govern exercise play:

- Real-world emergency actions take priority over exercise actions.
- Exercise participants will comply with real-world response procedures, unless otherwise directed by control staff.
- All communications (written, radio, telephone, etc.) made during the exercise will begin and end with the phrase, *"This is an exercise."*

Exercise participants placing telephone calls or initiating radio communication with the SimCell must identify the organization, agency, office, and/or individual with whom they wish to speak.

## Safety Requirements

### General

Exercise participant safety takes priority over exercise events. Although the organizations involved in the Hope Creek Unit Evaluated Full Scale Exercise come from various response agencies, they share the basic responsibility for ensuring a safe environment for all personnel involved in the exercise. In addition, aspects of an emergency response are dangerous. Professional health and safety ethics should guide all participants to operate in their assigned roles in the safest manner possible. The following general requirements apply to the exercise:

- All exercise controllers, evaluators, and staff will serve as safety observers while the exercise activities are underway. Any safety concerns must be immediately reported to the Lead Controller.
- Participants will be responsible for their own and each other's safety during the exercise. It is the responsibility of all persons associated with the exercise to stop play if, in their opinion, a real safety problem exists. Once the problem is corrected, exercise play can be restarted.
- All organizations will comply with their respective environmental, health, and safety plans and procedures, as well as the appropriate Federal, State, and local environmental health and safety regulations.

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### Exercise Setup

Exercise setup involves the pre-staging and dispersal of exercise materials; including registration materials, documentation, signage, and other equipment as appropriate.

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## Accident Reporting and Real Emergencies

- Anyone observing a participant who is seriously ill or injured will first advise the nearest controller, then if possible, render aid, provided the aid does not exceed his or her training.
- The controller who is made aware of a real emergency will initiate the broadcast “*Real-World Emergency*” on the controller radio network, providing the following information to the Senior Controller and Exercise Director:
  - Venue/function
  - Location within the venue/function
  - Condition
  - Requirements
- The SimCell will be notified as soon as possible if a real emergency occurs.
- If the nature of the emergency requires a suspension of the exercise at the venue/function, all exercise activities at that facility will immediately cease. Exercise play may resume at that venue/function once the “*Real-World Emergency*” situation has been addressed.
- Exercise play at other venue/functions should not cease if one venue/function has declared a “*Real-World Emergency*” unless they are reliant on the affected venue.
- If a real emergency occurs that affects the entire exercise, the exercise may be suspended or terminated at the discretion of the Exercise Director and Senior Controller. The notification will be made from the SimCell.

## Site Access

### Observer Coordination

Each organization with observers will coordinate with DEMA for access to the exercise site. Observers will be escorted to an observation area for orientation and conduct of the exercise. All observers will be asked to remain within the designated observation area during the exercise. The Lead Controller or another designated individual will be present to explain the exercise program and answer questions for the observers during the exercise. Under no circumstances are the observers to interfere with or affect the ongoing exercise.

### Directions

Directions to each venue area are available provided by DEMA.

### Exercise Identification

Identification badges may be issued to exercise staff. All exercise personnel and observers will be identified by badges distributed by the staff from each participating agency.

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## Communications Plan

### Exercise Start, Suspension, and Termination Instructions

Exercise play is scheduled for approximately eight hours or until the Lead Controller and Lead FEMA Evaluator determine that the exercise objectives have been met at each venue. DEMA will announce the exercise termination through the controllers at each facility.

**All spoken and written communication will start and end with the statement, "THIS IS AN EXERCISE."**

### Player Communication

Players will use routine, in-place agency communication systems. Additional communication assets may be made available as the exercise progresses. The need to maintain capability for a real-world response may preclude the use of certain communication channels or systems that would usually be available for an actual emergency incident. In no instance will exercise communication interfere with real-world emergency communications. Each venue will coordinate its own internal communication networks and channels.

The primary means of communication among the SimCell, Controllers, and the venues will be telephone. A list of key telephone and fax numbers, and radio call signs will be available as a Communication Directory before the start of the exercise.

### Player Briefing

Controllers/Evaluators may be required to read specific scenario details to the participants to begin exercise play. They may also have technical handouts or other materials to give to players in order to better orient them to the exercise environment.

### Public Affairs

This exercise enables Players to demonstrate an increased readiness to deal with a nuclear power plant incident. Any nuclear power plant exercise may be a newsworthy event. Special attention must be given to the needs of the media, allowing them to get as complete and accurate a story as possible while ensuring their activities do not compromise the exercise realism, safety, or objectives.

DEMA and PSEG Nuclear are responsible for disseminating public information in advance of the exercise.

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## CHAPTER 3: PLAYER GUIDELINES

### Exercise Staff

#### Exercise Director

The Exercise Director has the overall responsibility for planning, coordinating, and overseeing all exercise functions. He/she manages the exercise activities and maintains a close dialogue with the Controllers regarding the status of play and the achievement of the exercise design objectives.

#### Lead Controller

The Lead Controller is responsible for the overall organization during the exercise. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller debriefs the Controllers after the exercise and oversees the setup and takedown of the exercise.

#### Controllers

At least one controller will be onsite with every facility and field team participating in the exercise, and at each out-of-sequence interview. The Lead Facility Controller at each location will coordinate any changes that impact the scenario or affect other areas of play through the Lead Controller. The individual controllers issue exercise materials to players as required and monitor the exercise timeline. Controllers also provide injects to the players as described in the MSEL.

#### Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the exercise. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the Extent of Play. The Lead Evaluator debriefs the evaluators after the exercise and oversees the entire evaluation and After Action process.

#### Evaluators

Evaluators work under the direction of the Lead Evaluator, and as a team with Controllers. Evaluators are subject matter experts who record events that take place during the exercise and assess/submit documentation for review and inclusion in the After Action Report (AAR).

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## Player Instructions

### Before the Exercise

- Review the appropriate emergency plans, procedures, and exercise support documents.
- Be at the appropriate site at least 30 minutes before the start of the exercise. Wear appropriate uniform/identification badge.
- If you gain knowledge of the scenario before the exercise, notify a controller so that appropriate actions can be taken to ensure a valid evaluation.
- Read your Player Information Handout, which includes information on exercise safety.
- Please sign in.

### During the Exercise

- Respond to the exercise events and information as if the emergency were real, unless otherwise directed by an exercise controller.
- Controllers will only give you information they are specifically directed to disseminate. You are expected to obtain other necessary information through existing emergency information channels.
- Do not engage in personal conversations with controllers, evaluators, observers, or media personnel while the exercise is in progress. If you are asked an exercise-related question, give a short, concise answer. If you are busy and cannot immediately respond, indicate so, but report back with an answer at the earliest time possible.
- If you do not understand the scope of the exercise or if you are uncertain about an organization's or agency's participation in an exercise, ask a controller.
- Parts of the scenario may seem implausible. Recognize that the exercise has objectives to satisfy and may require the incorporation of unrealistic aspects. Note that every effort has been made by the trusted agents to balance realism with safety and the creation of an effective learning and evaluation environment.
- All exercise communication will begin and end with the phrase "This is an exercise." This is a precaution taken so anyone overhearing the conversation will not mistake the exercise play for a real-world emergency.
- When communicating with the SimCell, identify the organization, agency, office, and/or individual with which you want to speak.
- Verbalize out loud when taking an action. This will ensure that evaluators are made aware of critical actions as they occur.
- Maintain a log of your activities. Many times, this log may include documentation of activities missed by a controller or evaluator.

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### Following the Exercise

- At the end of the exercise at your facility, participate in the brief critique with the controllers and evaluators.
- Complete the Participant Feedback Form. This form allows you to comment candidly on emergency response activities and effectiveness of the exercise. Please provide the completed form to a controller or evaluator.
- Provide any notes or materials generated from the exercise to your controller or evaluator for review and inclusion in the AAR.

### Simulation Guidelines

Because the exercise is of limited duration and scope, the physical description of what would fully occur at the incident sites and surrounding areas will be relayed to the Players by Simulators or Controllers.

If a real emergency occurs during the exercise, the exercise at your respective venue may be suspended or terminated at the discretion of the controller(s) at each venue. If a real emergency occurs, say "Real-World Emergency" and notify the nearest Controller and Evaluator.

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## **CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES**

### **Exercise Documentation**

The goal of the 2012 Salem/Hope Creek Nuclear Generating Stations Evaluated Full Scale Exercise is to comprehensively exercise and evaluate the OROs' plans and capabilities as they pertain to a potential nuclear power plant incident. After the exercise, data collected by Controllers, Evaluators, the SimCell, and Players will be used to identify strengths and areas for improvement in the context of the exercise design objectives.

### **Exercise Evaluation Guides**

DHS has developed Exercise Evaluation Guides (EEGs) that identify expected activities for evaluation, provide consistency across exercises, and link individual tasks to disciplines and expected outcomes.

The Federal Emergency Management Agency (FEMA) Region III has decided not to use EEG's as part of Exercise Documentation process.

### **Players Critique**

Immediately following the completion of exercise play, Controllers will facilitate a critique with Players from their assigned location. The critique is an opportunity for Players to voice their opinions on the exercise and their own performance. At this time, Controllers can also seek clarification on certain actions and what prompted Players to take them. The critique should not last more than 30 minutes. Controllers should take notes during the critique and include these observations in their analysis.

### **Hotwash**

Prior to the Participants and Public/Media Briefing, The Federal Emergency Management Agency (FEMA) will facilitate a Hotwash with the State, Risk and Support Counties, local jurisdictions and agencies participating in the exercise. The Hotwash is an opportunity for evaluators and participants to voice preliminary performance concerns, demonstrated strengths, and thank those who played. At this time, Evaluators can also seek clarification on certain actions and what prompted Players to take them. Evaluators should take notes during the Hotwash and include these observations in their analysis, if necessary. The Hotwash will be held on May 24, 2012, 1500 at the Holiday Inn, Dover, Delaware.

### **Controller and Evaluator Debriefing**

Controllers, Evaluators, and selected exercise participants will attend a facilitated Controller and Evaluator Debriefing on May 22, 2012 at each evaluated location. During the debriefing these

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individuals will discuss their observations of the exercise in an open environment to clarify actions taken during the exercise.

### **Participants and Public/Media Briefings**

The Participants Briefing will be conducted on May 25, 2012, 0900, at the Holiday Inn, Dover, Delaware. The Public/Media Briefing will be conducted on May 25, 2012, 1130, at Salem County EOC, 135 3<sup>rd</sup> Floor, Cemetery Road, Woodstown, New Jersey.

### **After Action Report**

The After Action Report (AAR) is the culmination of the exercise. It is a written report outlining the strengths and areas for improvement identified during the exercise. The AAR will include the timeline, executive summary, scenario description, performance issues, planning issues, deficiencies, and capability analysis. The AAR will be drafted by a core group of individuals from the exercise planning team.

### **After Action Conference and Improvement Plan**

The improvement process represents the comprehensive, continuing preparedness effort of which the 2012 Salem/Hope Creek Nuclear Generating Stations is a part. The lessons learned and recommendations from the AAR will be incorporated into the Improvement Plan (IP).

#### **After Action Conference**

The After Action Conference (AAC) will be scheduled by DEMA, only if is necessary. As a forum for jurisdiction officials to hear the results of the evaluation analysis, validate the findings and recommendations in the draft AAR, and begin development of the IP.

#### **Improvement Plan**

The IP identifies how recommendations will be addressed, including what actions will be taken, who is responsible, and the timeline for completion. It is created by key stakeholders from the 2012 Salem/Hope Creek Nuclear Generating Stations participating agency officials during the AAC scheduled by DEMA if is necessary.

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## APPENDIX A: EXERCISE SCHEDULE

**Table A.1** 2012 S/HCNGS Evaluated Full Scale Exercise Schedule

| Time (Tentative) | Personnel  | Activity  |
|------------------|--|---|
| May 22, 2012     | State of Delaware EOC  | 2012 Hope Creek Unit<br>Evaluated Full Scale Exercise |
|                  | Technical Assessment Center (DEMA)   |   |
|                  | Emergency Operations Facility (EOF)  |   |
|                  | Emergency News Center (ENC)  |   |
|                  | State Field Monitoring Teams   |   |
|                  | Traffic and Access Control (DE State Police and DE Dept of Transportation) |   |
|                  | New Castle County EOC  |   |
|                  | Back-up Route Alerting (Townsend Fire Company)                             |   |
|                  | Kent County EOC  |   |
|                  | Back-up Route Alerting (Citizen Hose Fire Company)                         |   |

**Table A.2** 2012 S/HCNGS Evaluated Out of Sequence Schedule

| Time (Tentative) | Personnel   | Activity        |
|------------------|---|-----------------|
| April 30, 2012   | Delaware Department of Education (DOE)                            | School Exercise |
|                  | Colonial School District  |                 |
|                  | Southern Elementary   |                 |
|                  | Appoquinimink School District                                     |                 |
|                  | Redding Middle School   |                 |
|                  | Appoquinimink High School (Outside Emergency Planning Zone)       |                 |
|                  | MOT Charter School (Outside Emergency Planning Zone)              |                 |
|                  | Providence Creek Charter School (Outside Emergency Planning Zone) |                 |

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|             |   |                  |
|-------------|---|------------------|
| May 1, 2012 | Mass Care at Caesar Rodney High School                      | Mass Care        |
|             | Mass Care at Mt. Pleasant High School                       |                  |
| May 1, 2012 | Reception Center (Stern Readiness Center/DE National Guard) | Reception Center |

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## APPENDIX B: EXTENT OF PLAY

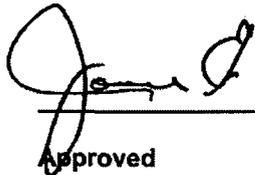
# STATE OF DELAWARE

## EXERCISE CRITERIA AND EXTENT-OF-PLAY

### Salem/Hope Creek Exercise May 2012

Revision 5

REAL LIFE EMERGENCIES TAKE PRIORITY OVER EXERCISE PLAY. IN THE EVENT OF AN ACTUAL EMERGENCY REQUIRING EOC ACTIVATION THE EXERCISE WILL BE IMMEDIATELY TERMINATED.

*Approved as modified to incorporate the office's expedient*  
 *James A. Director* *3/20/12*

Approved

Director, Delaware Emergency Management Agency/Date

## DELAWARE GROUND RULES

**REAL LIFE EMERGENCIES TAKE PRIORITY OVER EXERCISE PLAY. IN THE EVENT OF AN ACTUAL EMERGENCY REQUIRING EOC ACTIVATION THE EXERCISE WILL BE IMMEDIATELY TERMINATED.**

- \_ There will be injects as elements of the scenario.
- \_ A control cell will inject public inquiry messages at the State EOC.
- \_ State Controllers will provide injects at the State EOC.
- \_ State Controllers will inject radiological data for field radiological activities (i.e. Field Monitoring Teams and Reception Center).

### Note on Revision 5

The previous revision of this Extent-of-Play incorporated the Evaluation Areas and Criterion from the Interim REP Program Manual dated August, 2002. During the time this Extent-of-Play was being developed, a revised REP Program Manual (April 2012) was issued and implementation of portions of that document has been initiated. A number of the criteria have been revised or deleted in the latest REP Program Manual. This version of the Extent-of-Play incorporates those revised criteria (see below). None of the demonstrations and agreed upon Extents-of-Play for individual criteria have changed from the previous Extent-of-Play (Revision 4).

Criteria revised/deleted:

- 1.e.1 Revised
- 3.a.1 Record keeping for Emergency Worker Potassium Iodide (KI) added
- 3.b.1 Criterion no longer applies to Emergency Workers (added to 3.a.1)
- 3.d.2 Revised
- 4.a.1 Deleted. Demonstrations will occur under 1.e.1

- 6.a.1 No longer applies to Emergency Workers
- 6.b.1 Criterion for Emergency Worker monitoring and decontamination

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## INTRODUCTION

The purpose of this document is to establish those exercise evaluation areas and corresponding Extent-of-Play parameters expected to be demonstrated during the Salem/Hope Creek Nuclear Generating Stations (S/HCNGS) Plume graded exercise to be conducted on May 22, 2012.

This exercise is being conducted in close cooperation with the State of New Jersey. The New Jersey Office of Emergency Management (NJOEM) will submit a separate extent-of-play to FEMA Region II.

These evaluation areas have been developed through reviews of past exercises, associated plans and procedures, the proposed exercise scenario, applicable FEMA guidance documents, and extensive discussions with FEMA representatives

All demonstrations will be conducted in accordance with established plans and procedures, except as indicated for specific exercise evaluation areas described herein.

There were no exercise issues that will require corrective action by the State of Delaware during this exercise.

The following locations will be activated for this exercise:

**State**

State Emergency Operations Center (EOC)  
State Technical Assessment Center (TAC)  
Emergency Operations Facility (EOF)  
Emergency News Center (ENC)  
Delaware National Guard (DNG) Field Teams

**County Jurisdictions**

New Castle County EOC  
Kent County EOC

**Out of Sequence Demonstrations – Week of April 30<sup>th</sup>**

Some demonstrations will be conducted out-of-sequence. These demonstrations have been noted in the applicable evaluation area(s) objective and extent-of-play and are summarized below.

• **Criterion 1.b.1, 1.d.1, 1.e.1**

Demonstrations - May 1, 2012 (0900 – 1200)

Reception Center – Stern Readiness Center/Delaware National Guard (DNG)

• **Criterion 3.a.1 Emergency Worker Exposure Control**

Demonstrations - May 1, 2012 (0900 – 1200)

Reception Center – Stern Readiness Center/Delaware National Guard (DNG)

• **Criterion 3.b.1 Potassium Iodide (KI)**

• Demonstrations - May 1, 2012 (0900 – 1200)

Reception Center – Stern Readiness Center/Delaware National Guard (DNG)

- **Criterion 3.c.2 Schools**

Demonstrations - April 30, 2012 (1000 - 1200)

Colonial School District:  
Southern Elementary

Appoquinimink School District:  
Redding Middle School

Appoquinimink School District (outside EPZ)  
Appoquinimink High School

**Schools Outside EPZ**

MOT Charter  
Providence Creek

- **Criterion 6.a.1 Reception Center**

Demonstration – May 1, 2012 (0900 - 1200)

Reception Center – Stern Readiness Center/Delaware National Guard (DNG)

- **Criterion 6.c.1 Congregate Care**

Demonstration - May 1, 2012, (1300 – 1500)

Interview the Red Cross Shelter Manager at the site. – Mt. Pleasant High School and Caesar Rodney High School

# **EXERCISE CRITERIA AND EXTENT-OF-PLAY**

The Salem/Hope Creek Nuclear Generating Stations Plume Exercise will be conducted on May 22, 2012.

The following extent-of-play outlines the Evaluation Areas and the expected activities for objectives for this exercise. All activities will be demonstrated in accordance with established plans and procedures, except as indicated in the State of Delaware Extent-of-Play for each evaluation criterion.

## **Extent-of-Play by Evaluation Area**

The following evaluation areas, sub-elements and evaluation criterion are consistent with FEMA's exercise evaluation methods. Generic extent-of-play text from the REP Manual is quoted verbatim for each evaluation criterion and has been placed in italics. All activities will be demonstrated in accordance with established plans and procedures, except as indicated in the State of Delaware Extent-of-Play for each evaluation criterion.

### **EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT**

#### **Sub-element 1.a – Mobilization**

**Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG-0654, A.4, D.3, 4, E.1, 2, H.4)**

#### **Intent**

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

#### **Extent-of-Play**

*Responsible OROs should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner. Responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. Pre-positioning of emergency personnel is appropriate, in accordance with the Extent-of-Play agreement, at those facilities located beyond a normal commuting distance from the individual's duty location or residence. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the Extent-of-Play agreement.*

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as noted below.

Responders will pre-position at the following facilities:

- State EOC, Kent County EOC and New Castle County EOC
- Emergency News Center (ENC) – Woodstown, New Jersey
- Field Monitoring Teams – Delaware National Guard Headquarters

Twenty-four hour rosters will be available for key players at each EOC.

Mobilization of the following agencies will be simulated:

Delaware Emergency Management Agency, Kent County Emergency Management, New Castle County Office of Emergency Management, Delaware National Guard, Delaware State Police, Division of Public Health, Division of Water Resources, Division of Social Services, Division of Fish and Wildlife, Delaware State Fire School, Delaware Department of Transportation, American Red Cross of Delmarva Peninsula, Division of Parks and Recreation and Amateur Radio.

### **Locations Evaluated**

State EOC, Technical Assessment Center, Kent County EOC, New Castle County EOC, DNG Field Teams and ENC.

### **Outstanding Issues**

None

## **EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT**

### **Sub-element 1.b – Facilities**

#### **Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654, H)**

##### **Intent**

This sub-element is derived from NUREG-0654, which provides that OROs have facilities to support the emergency response.

##### **Extent-of-Play**

*Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations).*

##### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

##### **Locations Evaluated**

Out of Sequence

Reception Center/Stern Readiness Center Date (May 1, 2012)

##### **Outstanding Issues**

None

## EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

### Sub-element 1.c - Direction and Control

**Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654, A.1.d., 2.a., b.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to control their overall response to an emergency.

#### Extent-Of-Play

*Leadership personnel should demonstrate the ability to carry out essential functions of the response effort, for example: keeping the staff informed through periodic briefings and/or other means, coordinating with other appropriate OROs, and ensuring completion of requirements and requests.*

#### State of Delaware Extent-of-Play

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

#### Locations Evaluated

State EOC, Kent County EOC and New Castle County EOC

#### Outstanding Issues

None

## EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

### Sub-element 1.d – Communications Equipment

**Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1., 2.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should establish reliable primary and backup communication systems to ensure communications with key emergency personnel at locations such as the following: appropriate contiguous governments within the emergency planning zone (EPZ), Federal emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams.

#### Extent-Of-Play

*ORO's will demonstrate that a primary and at least one backup system are fully functional at the beginning of an exercise. If a communications system or system is not functional, but exercise performance is not affected, no exercise issue will be assessed. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exist.*

*The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system.*

#### State of Delaware Extent-of-Play

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

## **Locations Evaluated**

State EOC  
Technical Assessment Center  
Delaware National Guard Field Teams  
Kent County EOC  
New Castle County EOC  
Traffic and Access Control - Delaware State Police and Delaware Department of Transportation  
Route Alerting – Townsend Fire Company (Townsend)  
Citizens Hose Fire Company (Smyrna)  
Emergency Operations Facility (EOF)

## **Out of Sequence**

Reception Center - DNG Stern Readiness Center (May 1, 2012)

## **Outstanding Issues**

None

## EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

### Sub-element 1.e – Equipment and Supplies to Support Operations

**Criterion 1.e.1: Equipment, maps, displays, monitoring instruments, dosimetry, potassium iodide (KI) and other supplies are sufficient to support emergency operations (NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b)**

#### Intent

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have emergency equipment and supplies adequate to support the emergency response.

#### Extent-Of-Play

*Assessment of this Demonstration Criterion is accomplished primarily through a baseline evaluation and subsequent periodic inspections.*

*A particular facility's equipment and supplies must be sufficient and consistent with that facility's assigned role in the ORO's emergency operations plans. Use of maps and other displays is encouraged. For non-facility-based operations, the equipment and supplies must be sufficient and consistent with the assigned operational role. At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones, and signs) must be available, or their availability described.*

*Specific equipment and supplies that must be demonstrated under this criterion include KI inventories, dosimetry, and monitoring equipment, as follows:*

*KI: Responsible OROs must demonstrate the capability to maintain inventories of KI sufficient for use by: (1) emergency workers; (2) institutionalized individuals, as indicated in capacity lists for facilities; and (3) where stipulated by the plans/procedures, members of the general public (including transients) within the plume pathway EPZ. In addition, OROs must demonstrate provisions to make KI available to specialized response teams (e.g., civil support team, Special Weapons and Tactics Teams, urban search and rescue, bomb squads, HAZMAT, or other ancillary groups) as identified in plans/procedures). The plans/procedures must include the forms to be used for documenting emergency worker ingestion of KI, as well as a mechanism for identifying emergency workers that have declined KI in advance. Consider carefully the placement of emergency workers that have declined KI in advance.*

*ORO quantities of dosimetry and KI available and storage location(s) will be confirmed by physical inspection at the storage location(s) or through documentation of current inventory submitted during the exercise, provided in the ALC submission, and/or verified during an SAV. Available supplies of KI must be within the expiration date indicated on KI bottles or blister packs. As an alternative, the ORO may produce a letter from a certified private or state laboratory*

*indicating that the KI supply remains potent, in accordance with U.S. Pharmacopoeia standards.*

*Dosimetry: Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers must be available for issuance to all emergency workers who will be dispatched to perform an ORO mission. In addition, OROs must demonstrate provisions to make dosimetry available to specialized response teams (e.g., civil support team, Special Weapons and Tactics Teams, urban search and rescue, bomb squads, HAZMAT, or other ancillary groups) as identified in plans/procedures).*

*Appropriate direct-reading dosimetry must allow an individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans/procedures.*

*Direct-reading dosimeters must be zeroed or operationally checked prior to issuance. The dosimeters must be inspected for electrical leakage at least annually and replaced when necessary. Civil Defense Victoreen Model 138s (CD V-138s) (0-200 mR), due to their documented history of electrical leakage problems, must be inspected for electrical leakage at least quarterly and replaced when necessary. This leakage testing will be verified during the exercise, through documentation submitted in the ALC and/or through an SAV.*

*Operational checks and testing of electronic dosimeters must be in accordance with the manufacturer's instructions and be verified during the exercise, through documentation submitted in the ALC and/or through an SAV.*

*Monitoring Instruments: All instruments must be inspected, inventoried, and operationally checked before each use. Instruments must be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV-700 series instruments and other instruments without a manufacturer's recommendation must be calibrated annually. Modified CDV-700 instruments must be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration must be on each instrument or calibrated frequency can be verified by other means. In addition, instruments being used to measure activity must have a sticker-affixed to their sides indicating the effective range of the readings. The range of readings documentation specifies the acceptable range of readings that the meter should indicate when it is response-checked using a standard test source.*

*For FMTs, the instruments must be capable of measuring gamma exposure rates and detecting beta radiation. These instruments must be capable of measuring a range of activity and exposure, including radiological protection/exposure control of team members and detection of activity on air sample collection media, consistent with the intended use of the instrument and the ORO's plans/procedures. An appropriate radioactive check source must be used to verify proper operational response for each low-range radiation measurement instrument (less than 1R/hr) and for high-range instruments when available. If a source is not available for a high-range instrument, a procedure must exist to operationally test the instrument before entering an area where only a high-range instrument can make useful readings.*

*In areas where portal monitors are used, the OROs must set up and operationally check the monitor(s). The monitor(s) must conform to the standards set forth in the Contamination Monitoring Standard for a Portal Monitor Used for Emergency Response, FEMA-REP-21 (March 1995) or in accordance with the manufacturer's recommendations.*

*All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted below.

Radiological Equipment verification is included with the Annual Letter of Certification (ALC) or information is available at the State EOC. Additionally, this information will be available for the evaluator(s).

Deployment of traffic equipment will be simulated for Traffic and Access Control. Equipment will be available for review.

Radiological Emergency Worker kit (dosimeters and anti-contamination suit) will be available at the State EOC during the interview.

**Locations Evaluated**

State EOC

Technical Assessment Center (TAC)

New Castle County EOC

Kent County EOC

Delaware National Guard Field Teams

Route Alerting – Townsend Fire Company (Townsend) and Citizens Hose Fire Company (Smyrna)

Traffic and Access Control - Delaware State Police and Delaware Department of Transportation.

Emergency Operations Facility (EOF)

Out of Sequence

Reception Center - DNG Stern Readiness Center (May 1, 2012)

**Outstanding Issues: None**

## EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

### Sub-element 2.a – Emergency Worker Exposure Control

**Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, K.4.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that an ORO have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place as specified in the ORO's plans and procedures to authorize emergency worker exposure limits to be exceeded for specific missions.

Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits (that take into consideration Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

#### Extent-of-Play

*ORO's authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and procedures. Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to the number of emergency workers receiving radiation dose above pre-authorized levels. As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI, as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established protective action guides (PAGs) for KI administration.*

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted below.

The taking of KI by emergency workers will be simulated.

### **Locations Evaluated**

Technical Assessment Center (TAC)

### **Outstanding Issues**

None

## EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

### Sub-element 2.b. - Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

**Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (NUREG-0654, I.8., 10., 11. and Supplement 3.)**

#### Intent

This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on protective action guides (PAGs) from the ORO's plans and procedures, or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g. other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

#### Extent-of-Play

*During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PARs) for decision-makers based on available information and recommendations from the licensee and field monitoring data, if available.*

*When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAGs to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.*

*Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

**Locations Evaluated**

State EOC  
Technical Assessment Center (TAC)

**Outstanding Issues**

None

## EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

### Sub-element 2.b. - Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

**Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9., 10.m.)**

#### Intent

This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation and base these choices on protective action guides (PAGs) from the ORO's plans and procedures, FRC Reports Numbers 5 and 7 or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g. other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

#### Extent-Of-Play

*ORO should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.*

*The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. The decision-makers should demonstrate the capability to change protective actions as appropriate based on these projections.*

*If the ORO has determined that KI will be used as a protective measure for the general public under off-site plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement shelter and evacuation protective actions. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process should involve close coordination with appropriate assessment and decision-making staff.*

*If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

**Locations Evaluated**

State EOC  
Technical Assessment Center (TAC)

**Outstanding Issues**

None

## EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

### Sub-element 2.d - Radiological Assessment & Decision Making for Ingestion Exposure

**Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria. (NUREG-0645 I.8. J.11.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate PAGs, and make timely, appropriate protective action decisions to mitigate exposure from the ingestion pathway.

During an accident at a nuclear power plant, a release of radioactive material may contaminate water supplies and agricultural products in the surrounding areas. Any such contamination would likely occur during the plume phase of the accident and, depending on the nature of the release, could impact the ingestion pathway for weeks or years.

#### Extent-Of-Play

*It is expected that the Offsite Response Organizations (ORO's) will take precautionary actions to protect food and water supplies, or to minimize exposure to potentially contaminated water and food, in accordance with their respective plans and procedures. Often such precautionary actions are initiated by the ORO's based on criteria related to the facility's Emergency Classification Levels (ECL). Such actions may include recommendations to place milk animals on stored feed and to use protected water supplies.*

*The ORO should use its procedures (for example, development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. The ORO's assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the facility, and the extent of areas potentially impacted by the release. During this assessment, ORO's should consider the use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water should then be compared to the appropriate ingestion PAGs contained in the ORO's plan and/or procedures. (The plan and/or procedures may contain PAGs based on specific dose commitment criteria or based on criteria as recommended by current Food and Drug Administration guidance.) Timely and appropriate recommendations should be provided to the ORO decision-makers group for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.*

*The ORO should demonstrate timely decisions to minimize radiological impacts from the*

*ingestion pathway, based on the given assessments and other information available. Any such decisions should be communicated and, to the extent practical, coordinated with neighboring and local ORO's. ORO's should use Federal resources, as identified in the Federal Radiological Emergency Response Plan (FRRERP), and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

**Location Evaluated**

This objective will not be evaluated for this Exercise.

**Outstanding Issues**

None

## EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

### Sub-element 2.e. - Radiological Assessment & Decision Making for Radiological Assessment and Decision Making for Relocation, Return, & Re-entry

**Criterion 2.e.1:** *Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plans and procedures. (NUREG-0654, A.1.b. I.10.,M)*

#### Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to make decisions on relocation, Reentry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a nuclear power plant.

#### Extent-Of-Play

**Relocation:** *ORO's should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs, and control access to evacuated and restricted areas. Decisions are made for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs. Determination of areas to be restricted should be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.*

**Reentry:** *Decisions should be made regarding the location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to temporarily enter the evacuated area to perform specific tasks or missions. Examples of control procedures are: the assignment of, or checking for, direct-reading and non-direct-reading dosimetry for emergency workers; questions regarding the individual's objectives and locations expected to be visited and associated time frames; availability of maps and plots of radiation exposure rates; advice on areas to avoid; and procedures for exit including: monitoring of individuals, vehicles, and equipment; decision criteria regarding decontamination; and proper disposition of emergency worker dosimetry and maintenance of emergency worker radiation exposure records. Responsible ORO's should demonstrate the capability to develop a strategy for authorized Reentry of individuals into the restricted zone, based on established decision criteria.*

*ORO's should demonstrate the capability to modify those policies for security purposes (e.g., police patrols), for maintenance of essential services (e.g., fire protection and utilities), and*

*for other critical functions. They should demonstrate the capability to use decision making criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (e.g., to care for farm animals or secure machinery for storage), or to retrieve important possessions. Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. ORO's should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that ORO's need to develop policies on Reentry will be determined by scenario events.*

**Return:** *Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return. Return is permitted to the boundary of the restricted area that is based on the relocation PAG. Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the Emergency Classification Level and the relaxation of associated restrictive measures; basing return recommendations (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and the capability to identify services and facilities that require restoration within a few days and to identify the procedures and resources for their restoration. Examples of these services and facilities are: medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.*

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

### **Locations Evaluated**

This objective will not be evaluated for this Exercise

### **Outstanding Issues**

None

## EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

### Sub-element 2.c - Protective Action Decisions Consideration for the Protection of Special Populations

**Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9., 10.c.d.e.g.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to determine protective action recommendations, including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, and transportation dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

#### Extent-Of-Play

*Usually, it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are weather conditions, shelter availability, Evacuation Time Estimates, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.*

#### State of Delaware Extent-of-Play

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

#### Locations Evaluated

State EOC

#### Outstanding Issues

None

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### EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

#### Sub-element 3.a – Implementation of Emergency Worker Exposure Control

**Criterion 3.a.1: The OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to emergency workers in accordance with the plans/procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to emergency workers. (NUREG-0654/FEMA-REP-1, J.10.e; K.3.a, b; K.4)**

#### Intent

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimetry and permanent record dosimetry; reading of direct-reading dosimetry by emergency workers at appropriate frequencies; maintaining a radiation dose record for each emergency worker; establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of the PAGs, and the capability to provide KI for emergency workers, always applying the —as low as is reasonably achievable principle as appropriate.

#### Extent-Of-Play

*Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.*

*ORO's must demonstrate the capability to provide emergency workers (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, dosimeter chargers, KI, and instructions on the use of these items. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows an individual(s) to read the administrative reporting limits that are pre-established at a level low enough to consider subsequent calculation of TEDE and maximum exposure limits, for those emergency workers involved in lifesaving activities, contained in the ORO's plans/procedures.*

*Each emergency worker must have basic knowledge of radiation exposure limits as specified in the ORO's plans/procedures. If supplemental resources are used, they must be provided with just-in-time training to ensure basic knowledge of radiation exposure control. Emergency workers must demonstrate procedures to monitor and record dosimeter readings and manage radiological exposure control.*

*During a plume phase exercise, emergency workers must demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker must report accumulated exposures during the exercise as indicated in the plans/procedures. OROs must demonstrate the actions described in the plans/procedures by determining whether to replace the worker, authorize the worker to incur additional exposures,*

*or take other actions. If exercise play does not require emergency workers to seek authorizations for additional exposure, evaluators must interview at least two workers to determine their knowledge of whom to contact in case authorization is needed, and at what exposure levels. Workers may use any available resources (e.g., written procedures and/or coworkers) in providing responses.*

*Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission. In such cases, adequate control of exposure can be achieved for all team members using one direct-reading dosimeter worn by the team leader. Emergency workers assigned to low-exposure rate fixed facilities (e.g., EOCs and communications center within the EPZ, reception centers, and counting laboratories) may have individual direct-reading dosimeters or they may be monitored using group dosimetry (i.e., direct-reading dosimeters strategically placed in the work area). Each team member must still have his or her own permanent record dosimetry. Individuals authorized by the ORO to reenter an evacuated area during the plume (emergency) phase, must be limited to the lowest radiological exposure commensurate with completing their missions.*

*OROs may have administrative limits lower than EPA-400-R-92-001 dose limits for emergency workers performing various services (e.g., life saving, protection of valuable property, all activities). OROs must ensure that the process used to seek authorization for exceeding dose limits does not negatively impact the capability to respond to an incident where life saving and/or protection of valuable property may require an urgent response.*

*OROs must demonstrate the capability to accomplish distribution of KI to emergency workers consistent with decisions made. OROs must have the capability to develop and maintain lists of emergency workers who have ingested KI, including documentation of the date(s) and time(s) they did so. Ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI shall not be performed. OROs must demonstrate the capability to formulate and disseminate instructions on using KI for those advised to take it. Emergency workers must demonstrate basic knowledge of procedures for using KI whether or not the scenario drives the implementation of KI use. This can be accomplished by an interview with the evaluator.*

*All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.*

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as noted below.

### **Locations Evaluated**

Delaware National Guard Field Teams  
Townsend Fire Company (Townsend) and Citizens Hose Fire Company (Smyrna)  
Traffic and Access Control - Delaware State Police and Delaware Department of Transportation  
Emergency Operating Facility

Out of Sequence  
Reception Center/Stern Readiness Center Date (May 1, 2012)

### **Outstanding Issues**

None

### EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

#### Sub-element 3.b – Implementation of KI Decision for Institutionalized Individuals and the General Public

**Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for institutionalized individuals and the general public is maintained. (NUREG-0654, J.10. e., f.)**

##### Intent

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to provide KI for institutionalized individuals, and, if in the plans/procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to institutionalized individuals, providing KI to the general public is an ORO option and must be reflected as such in ORO plans/procedures. Provisions must include the availability of adequate quantities, storage, and means of distributing KI.

##### Extent-Of-Play

*Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.*

*ORO's must demonstrate the capability to make KI available to institutionalized individuals, and, where provided for in their plans/procedures, to members of the general public. ORO's must demonstrate the capability to accomplish distribution of KI consistent with decisions made. ORO's must have the capability to develop and maintain lists of institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. Ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI shall not be performed. ORO's must demonstrate the capability to formulate and disseminate instructions on using KI for those advised to take it.*

*If a recommendation is made for the general public to take KI, appropriate information must be provided to the public by the means of notification specified in the ORO's plans/procedures.*

*All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.*

##### State of Delaware Extent-of-Play

All activities will be based on the ORO's plans and procedures and completed as they would be

in an actual emergency except as noted below.

If directed, ingestion of KI will be simulated.

**Locations Evaluated**

None

**Outstanding Issues**

None

## EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

### Sub-element 3.c – Implementation of Protective Actions for Special Populations

**Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions. (NUREG-0654, E.7., J.9., 10.c.d.e.g.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special populations. Focus is on those special populations that are (or potentially will be) affected by a radiological release from a nuclear power plant.

#### Extent-Of-Play

*Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.*

*Contact with special populations and reception facilities may be actual or simulated, as agreed to in the Extent-of-Play. Some contacts with transportation providers should be actual, as negotiated in the Extent-of-Play. All actual and simulated contacts should be logged.*

#### State of Delaware Extent-of-Play

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as noted below.

There will be no actual notification of special populations.

List of institutionalized special populations will be available at the State EOC.

List of individual special populations will be available at the Kent County EOC and New Castle County EOC.

All actual and simulated contacts will be logged.

**Locations Evaluated**

State EOC

Kent County EOC

New Castle County EOC

**Outstanding Issues**

None

### EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

#### Sub-element 3.c – Implementation of Protective Actions for Special Populations

##### Criterion 3.c.2: OROs/School officials decide upon and implement protective actions for schools. (NUREG-0654, J.10.c., d., g.)

###### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special populations. Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

###### Extent-Of-Play

*Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts, licensed day care centers, and participating private schools within the emergency planning zone of emergency conditions that are expected to or may necessitate protective actions for students.*

*In accordance with plans and/or procedures, OROs and/or officials of participating public and private schools and licensed day care centers should demonstrate the capability to make and implement prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (e.g., either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).*

*Implementation of protective actions should be completed subject to the following provisions: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver (and the bus driver's escort, if applicable) should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.*

*Officials of the participating school(s) or school system(s) should demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.*

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as noted below.

Protective actions for schools will be demonstrated as an out-of-sequence activity on April 30<sup>th</sup>, 2012.

School principals or designees, Superintendent or designees, and bus drivers will be interviewed on procedures. A bus will be available at each school, for equipment (communications and maps) observation. However, the school children will not be involved with the demonstration nor will the buses be driven to the designated routes. Interviews will be conducted at the following schools:

**Colonial School District: Southern Elementary School,**

**Appoquinimink School District: Redding Middle School and Appoquinimink High School (outside EPZ)**

**MOT Charter School – outside EPZ  
Providence Creek - outside EPZ**

The Department of Education (DOE) representative at the State EOC will demonstrate their procedures for the evaluator during the exercise.

Private schools, private kindergartens and licensed day cares do not participate in REP Exercises. However, OROs will be prepared to show evaluators a list of these facilities that they will contact in the event of an emergency in accordance with their plans and procedures.

The licensed day care notification process will be demonstrated at the State EOC on May 22, 2012. A list of licensed day cares will be available at the State EOC. The process of notification procedures will be demonstrated and documented. There will be no actual notification of licensed day cares.

### **Locations Evaluated**

State EOC      Licensed Day Care Notification Process  
                    Department of Education Representative

**Outstanding Issues - None**

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**EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION****Sub-element 3.d. – Implementation of Traffic and Access Control**

**Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654, J.10.g., j., k.)**

**Intent**

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement protective action plans, including relocation and restriction of access to evacuated/sheltered areas. This sub-element focuses on selecting, establishing, and staffing of traffic and access control points and removal of impediments to the flow of evacuation traffic.

**Extent-Of-Play**

*ORO should demonstrate the capability to select, establish, and staff appropriate traffic and access control points consistent with protective action decisions (for example, evacuating, sheltering, and relocation), in a timely manner. OROs should demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.*

*Traffic and access control staff should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview in accordance with the Extent-of-Play agreement.*

*In instances where OROs lack authority necessary to control access by certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed, as they would be in an actual emergency except as noted below.

Interviews will be conducted at the State EOC out-of-sequence between 1800 and 1900 which may not be within exercise play. There will be no actual deployment of Access Control and Traffic Control Points.

Delaware State Police and Delaware Department of Transportation personnel will be interviewed on Traffic and Access Control procedures and will demonstrate communication systems, as well as exposure control procedures for DSP and DelDOT.

personnel will simulate reporting to the Emergency Worker Decontamination Center (National Guard Readiness Center) in Middletown, Delaware.

If directed, suiting in anti-contamination clothing and the ingestion of KI will be simulated.

### **Locations Evaluated**

Traffic and Access Control - Delaware State Police and Delaware Department of Transportation State EOC

### **Outstanding Issues**

None

**EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION****Sub-element 3.d. – Implementation of Traffic and Access Control****Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654, J.10., k.)****Intent**

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement protective action plans, including relocation and restriction of access to evacuated/sheltered areas. This sub-element focuses on selecting, establishing, and staffing of traffic and access control points and removal of impediments to the flow of evacuation traffic.

**Extent-Of-Play**

*Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, an actual event, or by means of drills conducted at any time.*

*ORO's must demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, all contacts, actual or simulated, must be logged. The impediment must occur during the evacuation and be on an evacuation route such that re-routing of traffic is required, triggering decision-making and coordination with the JIC to communicate the alternate route to evacuees leaving the area.*

*All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as noted below.

Interviews will be conducted at the State EOC.

There will be no actual deployment of Access Control and Traffic Control points.

Radiological Emergency Worker kits (dosimeters and anti-contamination suits) will be available at the State EOC during the interview.

If directed, suiting in anti-contamination clothing and the ingestion of KI will be simulated.

DSP and DelDOT personnel will simulate reporting to the Emergency Worker Decontamination Center (National Guard Readiness Center) in Middletown, Delaware.

An inject will be provided by controllers regarding a road impediment/impediments.

**Locations Evaluated**

Traffic and Access Control - Delaware State Police and Delaware Department of Transportation State EOC

**Outstanding Issues: None**

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**EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION****Sub-element 3.e - Implementation of Ingestion Pathway Decisions**

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

**Intent**

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

**Extent-Of-Play**

*Applicable ORO's should demonstrate the capability to secure and utilize current information on the locations of dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points to implement protective actions within the ingestion pathway EPZ. ORO's should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

**Locations Evaluated**

This objective will not be evaluated for this Exercise

**Outstanding Issues**

None

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### EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

#### Sub-element 3.e - Implementation of Ingestion Pathway Decisions

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

##### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

##### Extent-Of-Play

*Development of measures and strategies for implementation of IPZ protective actions should be demonstrated by formulation of protective action information for the general public and food producers and processors. This includes either pre-distributed public information material in the IPZ or the capability for the rapid reproduction and distribution of appropriate reproduction-ready information and instructions to pre-determined individuals and businesses. ORO's should demonstrate the capability to control, restrict or prevent distribution of contaminated food by commercial sectors.*

*Exercise play should include demonstration of communications and coordination between organizations to implement protective actions. Actual field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.*

##### State of Delaware Extent-of-Play

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

##### Locations Evaluated

This objective will not be evaluated for this Exercise

##### Outstanding Issues

None

## EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

### Sub-Element 3.f—Implementation of Relocation, Reentry, and Return Decisions

**Criterion 3.f.1: Decisions regarding controlled Reentry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG-0654, M.1, 3)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) should demonstrate the capability to implement plans, procedures, and decisions for relocation, Reentry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

#### Extent-Of-Play

***Relocation:** ORO's should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. ORO's should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the (first-, second-, and fifty-year) PAGs.*

*Areas of consideration should include the capability to communicate with ORO's regarding timing of actions, notification of the population of the procedures for relocation, and the notification of, and advice for, evacuated individuals who will be converted to relocation status in situations where they will not be able to return to their homes due to high levels of contamination. ORO's should also demonstrate the capability to communicate instructions to the public regarding relocation decisions.*

***Reentry:** ORO's should demonstrate the capability to control Reentry and exit of individuals who need to temporarily re-enter the restricted area, to protect them from unnecessary radiation exposure and for exit of vehicles and other equipment to control the spread of contamination outside the restricted area. Monitoring and decontamination facilities will be established as appropriate. Examples of control procedure subjects are: (1) The assignment of, or checking for, direct-reading and non-direct-reading dosimetry for emergency workers; (2) questions regarding the individuals' objectives and locations expected to be visited and associated timeframes; (3) maps and plots of radiation exposure rates; (4) advice on areas to avoid; and procedures for exit, including monitoring of individuals, vehicles, and equipment, decision criteria regarding contamination, proper disposition of emergency worker dosimetry, and maintenance of emergency worker radiation exposure records.*

**Return:** ORO's should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. ORO's should demonstrate the capability to identify and prioritize services and facilities that require restoration within a few days, and to identify the procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

Communications among ORO's for relocation, Reentry, and return may be simulated; however all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting. ORO's should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.

### **Locations Evaluated**

This objective will not be evaluated for this Exercise

### **Outstanding Issues**

None

## EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

### Sub-element 4.a – Plume Phase Field Measurements and Analyses

**Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, I.8., 11., J.10.a).**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

#### Extent-Of-Play

*Responsible OROs should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment.*

*Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions or to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts.*

*If the responsibility to obtain peak measurements in the plume has been accepted by license field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by State and local monitoring teams. If the license teams do not obtain peak measurements in the plume, it is the ORO's decision as to whether peak measurements are necessary to sufficiently characterize the plume. The sharing and coordination of plume measurement information among all field teams (licensee, federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated.*

*ORO should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.*

**State of Delaware Extent-of-Play**

All activities will be demonstrated in accordance with established plans and procedures as they would in an actual emergency.

**Locations Evaluated**

Technical Assessment Center

**Outstanding Issues**

None

## EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

### Sub-element 4.a – Plume Phase Field Measurements and Analyses

**Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I.8., 9., 11.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

#### Extent-Of-Play

*Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. The methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures.*

*ORO should use Federal resources as identified in the FRRP, and other resources (e.g., compacts, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as indicated below.

Delaware National Guard (DNG) Field Teams will pre-demonstrate equipment checkout, ambient radiation monitoring procedures and air sampling procedures at DNG Headquarters May 22, 2012 (3:00 p.m.)

Two (2) DNG Field Monitoring Teams (FMTs) will be evaluated.

The DNG Field Teams will remain at the DNG Headquarters until activated. They will not be required to perform a second instrument checkout.

If the DNG State Field Monitoring Teams are requested to perform an additional air sample and count during exercise play, the FMTs will perform the tasking, but the pre-demonstration will serve as the evaluation demonstration for this criterion.

If directed, suiting in anti-contamination clothing and taking of KI will be simulated. DNG Field Monitoring Teams will simulate reporting to the Emergency Worker Decontamination Center in Middletown following completion of their assignment.

Delivery of samples for additional analysis will not be demonstrated. Chain of custody procedures will be described to the evaluator.

**Locations Evaluated**

Delaware National Guard Field Teams (DNG Headquarters)

**Outstanding Issues**

None

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## EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

### Sub-element 4.b – Post Plume Phase Field Measurements and Sampling

**Criterion 4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making. (NUREG-0654, I.8., J.11.)**

#### INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the ingestion emergency planning zone (IPZ) and for relocation, re-entry and return measures.

This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

#### EXTENT-OF-PLAY

The ORO field teams should demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures.

Ingestion pathway samples should be secured from agricultural products and water. Samples in support of relocation and return should be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition.

ORO's should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

#### **State of Delaware Extent-of-Play**

This objective will not be evaluated for this Exercise

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## EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

### Sub-element 4.c - Laboratory Operations

**Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654, C.3., I.8., 9., J.11)**

#### INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision-making.

#### EXTENT-OF-PLAY

The laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, preventing buildup of background radiation due to stored samples, preventing cross contamination of samples, preserving samples that may spoil (e.g., milk), and keeping track of sample identity. In addition, the laboratory staff should demonstrate the capability to prepare samples for conducting measurements.

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g. transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

The laboratory staff is qualified in radio analytical techniques and contamination control procedures.

ORO's should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

#### **State of Delaware Extent-of-Play**

This objective will not be evaluated for this Exercise

## EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

### Sub-element 5.a – Activation of the Prompt Alert and Notification System

**Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E & NUREG-0654, E. 1., 4., 5., 6., 7.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.), and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

#### Extent-Of-Play

*Responsible OROs should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance.*

*For exercise purposes, timely is defined as "the responsible ORO personnel/ representatives demonstrate actions to disseminate the appropriate information/ instructions with a sense of urgency and without undue delay." If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.*

*Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages is not required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation.*

*The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.*

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as indicated below.

Siren activation and broadcast of the EAS message will be simulated.

Alert and notification of the Delaware River area will be simulated.

One siren will be simulated to fail in New Castle County (an inject will be provided for notification of siren failure) within the Townsend Fire Company (Townsend).

One siren will be simulated to fail in Kent County (an inject will be provided for notification of siren failure) within the Citizens Hose Fire Company (Smyrna).

The message broadcast for route alerting will be played by the Fire Company prior to deployment.

A roster of special populations will be provided to the evaluator. No contact will be made during the demonstration with special populations. Upon completion of the route alerting, the fire company personnel will simulate reporting to the Emergency Worker Decontamination Center (Delaware National Guard Readiness Center) in Middletown, DE.

### **Locations Evaluated**

State EOC

### **Outstanding Issues**

None

## EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

### Sub-element 5.a – Activation of the Prompt Alert and Notification System

**Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654, E. 6., Appendix 3.B.2.c)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.) and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

#### Extent-Of-Play

*ORO's with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5-10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information.*

*For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected routes should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (e.g., the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the Extent-of-Play. Actual testing of the mobile public address system will be conducted at some agreed upon location.*

*Backup alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting needs only be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the Extent-of-Play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (e.g., the message that would actually*

*be used is read for the evaluator, but not actually broadcast) as agreed upon in the Extent-of-Play. Actual testing of the Public Address system will be conducted at some agreed upon location.*

### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as indicated below.

One back-up route-alerting route will be demonstrated in New Castle County.

Two sirens will be simulated to fail, one in New Castle County and one in Kent County (injects will be provided for notification of siren failure) within the Townsend Fire Company (Townsend) district in New Castle County and within the Citizens Hose Fire Company (Smyrna) district in Kent County to initiate route alerting demonstration. The message broadcast for route alerting will be played by the Fire Company prior to deployment. A roster of special populations will be provided to the evaluator. No contact will be made during the demonstration with special populations. Upon completion of the route alerting, the fire company personnel will simulate reporting to the Emergency Worker Decontamination Center (Delaware National Guard Readiness Center), in Middletown, Delaware.

### **Locations Evaluated**

State EOC  
New Castle County EOC  
Kent County EOC  
Townsend Fire Company (Townsend)  
Citizens Hose Fire Company (Smyrna)

### **Outstanding Issues**

None

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**EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION****Sub-element 5.b – Emergency Information and Instructions for the Public and the Media****Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654, E. 5.,7., G.3.a., G.4.a.,b.,c.)****Intent**

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to disseminate to the public appropriate emergency information and instructions including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure the capability exists for providing information to the media. This includes the availability of a physical location for use by the media during an emergency. NUREG-0654 also provides that a system be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

**Extent-Of-Play**

*Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (will not be subject to specific time requirements). For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.*

*The OROs should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, public inquiry telephone number, etc.) to assist the public in carrying out protective action decisions provided to them. OROs should demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.*

*The emergency information should be all-inclusive by including previously identified protective action areas that are still valid as well as new areas. The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.*

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*OROs should demonstrate the capability to develop emergency information in a non-English language when required by the plan and/or procedures.*

*If ingestion pathway measures are exercised, OROs should demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures.*

*OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute media releases as the situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media briefings and media releases should be consistent with protective action decisions and other emergency information provided to the public. Copies of pertinent emergency information (e.g., EAS messages and media releases) and media information kits should be available for dissemination to the media.*

*OROs should demonstrate that an effective system is in place for dealing with calls to the public inquiry hotline. Hotline staff should demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. Information from the hotline staff, including information that corrects false or inaccurate information when trends are noted, should be included, as appropriate, in emergency information provided to the public, media briefings, and/or media releases.*

#### **State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as indicated below.

Press releases and EAS messages are written and approved at the State EOC. Actual broadcast of EAS messages will be simulated. The Emergency News Center (ENC) lead, Woodstown, NJ disseminates this information at the ENC. At least one media briefing will be conducted. Public inquiry calls will be initiated. The public inquiry (rumor control) at the State EOC will be staffed with two operators and will receive at least six calls to include at least two (2) identifiable trends.

#### **Locations Evaluated**

State EOC, Emergency News Center (ENC), Woodstown, New Jersey

**Outstanding Issues:** None

## EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

### Sub-element 6.a – Monitoring and Decontamination and Registration of Evacuees

**Criterion 6.a.1: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees. (NUREG-0654, A.3; C.4; J.10.h; J.12)**

#### Intent

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement radiological monitoring and decontamination of evacuees, while minimizing contamination of the facility. OROs must also have the capability to identify and register evacuees at reception centers.

#### Extent-Of-Play

*Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, drills, or SAV.*

*Radiological monitoring, decontamination, and registration facilities for evacuees must be set up and demonstrated as they would be in an actual emergency or as indicated in the Extent-of-Play Agreement. OROs conducting this demonstration must have one-third of the resources (e.g., monitoring teams/instrumentation/portal monitors) available at the facility(ies) as necessary to monitor 20 percent of the population within a 12-hour period. This would include adequate space for evacuees' vehicles. Availability of resources can be demonstrated with valid documentation (e.g., MOU/LOA, etc.) reflecting how necessary equipment would be procured for the location. Plans/procedures must indicate provisions for service animals.*

*Before using monitoring instrument(s), the monitor(s) must demonstrate the process of checking the instrument(s) for proper operation. Staff responsible for the radiological monitoring of evacuees must demonstrate the capability to attain and sustain, within about 12 hours, a monitoring productivity rate per hour needed to monitor the 20 percent EPZ population planning base. The monitoring productivity rate per hour is the number of evacuees that can be monitored, per hour, by the total complement of monitors using an appropriate procedure. For demonstration of monitoring, decontamination, and registration capabilities, a minimum of six evacuees must be monitored per station using equipment and procedures specified in the plans/procedures. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators to determine whether the 12-hour requirement can be met.*

*ORO must demonstrate the capability to register evacuees upon completion of the monitoring and decontamination activities. The activities for recording radiological monitoring and, if necessary, decontamination must include establishing a registration record consisting of the evacuee's name, address, results of monitoring, and time of decontamination (if any), or as otherwise designated in the plan and/or procedures. Audio recorders, camcorders, or written records are all acceptable means for registration.*

*Monitoring activities shall not be simulated. Monitoring personnel must explain use of trigger/action levels for determining the need for decontamination. They must also explain the procedures for referring any evacuees who cannot be adequately decontaminated for assessment and follow-up in accordance with the ORO's plans/procedures. Contamination of the evacuee(s) will be determined by controller inject and not simulated with any low-level radiation source. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.*

*Decontamination of evacuees may be simulated and conducted by interview. Provisions for separate showering and same-sex monitoring must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas. Provisions must also exist to separate contaminated and uncontaminated evacuees, provide changes of clothing for those with contaminated clothing; and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any evacuee found to be contaminated, procedures must be discussed concerning handling of potential contamination of vehicles and personal belongings. Waste water from decontamination operations does not need to be collected.*

*Individuals who have completed monitoring (and decontamination, if needed) must have means (e.g., hand stamp, sticker, bracelet, form, etc) indicating that they, and their service animals and vehicles, where applicable, have been monitored, cleared, and found to have no contamination or contamination below the trigger/action level.*

*In accordance with plans/procedures, individuals found to be clean after monitoring do not need to have their vehicle monitored. These individuals do not require confirmation that their vehicle is free from contamination prior to entering the congregate care areas.*

*However, those individuals who are found to be contaminated and are then decontaminated will have their vehicles monitored and decontaminated (if applicable) and do require confirmation that their vehicle is free from contamination prior to entering the congregate care areas.*

#### **State of Delaware Extent-of-Play:**

These activities will be based on the ORO's plans and procedures and completed, as they would be in an actual emergency except as indicated below.

DNG Stern Readiness Center in Wilmington will be demonstrated out-of-sequence.

At least six (6) evacuees will be monitored with two simulated as contaminated.

They will process one (1) male decontamination and one (1) female decontamination.

Two (2) vehicles will be demonstrated for monitoring and decontamination. One (1) clean vehicle and one (1) contaminated.

Decontamination techniques will be simulated. If directed, suiting in anti-contamination clothing and the ingestion of KI will be simulated.

Procedures will be demonstrated to show the separation of contaminated and non-contaminated (clean) individuals to minimize cross contamination.

**Locations Evaluated**

Reception Center – Stern Readiness Center/Delaware National Guard (DNG)

**Outstanding Issues:**

None

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## EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

### Sub-element 6.b – Monitoring and Decontamination of Emergency Workers and their Equipment and Vehicles

**Criterion 6.b.1: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles. (NUREG-0654/FEMA-REP-1, K.5.a, b)**

#### Intent

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement radiological monitoring and decontamination of emergency workers and their equipment, inclusive of vehicles.

#### Extent-Of-Play

*Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, drills, or SAV.*

*The monitoring staff must demonstrate the capability to monitor emergency worker personnel and their equipment and vehicles for contamination in accordance with the ORO's plans/procedures.*

*Specific attention must be given to equipment, including any vehicles that were in contact with contamination. The monitoring staff must demonstrate the capability to make decisions on the need for decontamination of personnel, equipment, and vehicles based on trigger/action levels and procedures stated in the ORO plans/procedures. Monitoring of emergency workers does not have to meet the 12-hour requirement. However, appropriate monitoring procedures must be demonstrated for a minimum of two emergency workers and their equipment and vehicles. Before using monitoring instrument(s), the monitor(s) must demonstrate the process of checking the instrument(s) for proper operation.*

*The area to be used for monitoring and decontamination must be set up as it would be in an actual emergency, with all route markings, instrumentation, record keeping, and contamination control measures in place. Monitoring procedures must be demonstrated for a minimum of one vehicle. It is generally not necessary to monitor the entire surface of vehicles. However, the capability to monitor areas such as radiator grills, bumpers, wheel wells, tires, and door handles must be demonstrated. Interior surfaces of vehicles that were in contact with contaminated individuals must also be checked.*

*Decontamination of emergency workers may be simulated and conducted via interview. Provisions for separate showering and same-sex monitoring must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas. Provisions must*

*also exist to separate contaminated and uncontaminated individuals where applicable; provide changes of clothing for those with contaminated clothing; and store contaminated clothing and personal belongings to prevent further contamination of emergency workers or facilities.*

*Monitoring activities shall not be simulated. Monitoring personnel must explain use of trigger/action levels for determining the need for decontamination. They must also explain the procedures for referring any emergency workers who cannot be adequately decontaminated for assessment and follow-up in accordance with the ORO's plans/procedures. Contamination of the individual(s) will be determined by controller inject and not simulated with any low-level radiation source.*

*Decontamination capabilities and provisions for vehicles and equipment that cannot be successfully decontaminated may be simulated and conducted by interview. Waste water from decontamination operations does not need to be collected.*

*All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.*

#### **State of Delaware Extent-of-Play**

This objective will not be evaluated for this Exercise

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## EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

### Sub-element 6.c - Temporary Care of Evacuees

**Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines (found in MASS CARE-Preparedness Operations, ARC 3031). Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h., 12.)**

#### Intent

This sub-element is derived from NUREG-0654, which provides that OROs demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross under existing letters of agreement.

#### Extent-Of-Play

*Under this criterion, demonstration of congregate care centers may be conducted out of sequence with the exercise scenario. The evaluator should conduct a walk-through of the center to determine, through observation and inquiries, that the services and accommodations are consistent with ARC 3031. **In this simulation, it is not necessary to set up operations, as they would be in an actual emergency.** Alternatively, capabilities may be demonstrated by setting up stations for various services and providing those services to simulated evacuees. Given the substantial differences between demonstration and simulation of this criterion, exercise demonstration expectations should be clearly specified in extent-of-play agreements.*

*Congregate care staff should also demonstrate the capability to ensure that evacuees have been monitored for contamination, have been decontaminated as appropriate, and have been registered before entering the facility. This capability may be determined through an interview process.*

*If operations at the center are demonstrated, material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility(ies). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.*

**State of Delaware Extent-of-Play**

All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency except as indicated below.

This element will be evaluated as an out-of-sequence activity. Actual set up of the center will not be demonstrated. Processes will be described to the evaluator during an interview at the designated location.

Capabilities will be demonstrated through an interview process.

Availability of additional personnel will be determined by interview.

Supplies required for long term mass care (cots, blankets, food, etc) are not to be acquired or brought to the Congregate Care Shelters.

**Locations Evaluated**

Mt. Pleasant High School  
Caesar Rodney High School

Out of Sequence  
May 1, 2012 (1300 – 1500)

**Outstanding Issues**

None

## APPENDIX C: FACILITIES AND SITE MAP

The following locations will be activated for this exercise

### State

State Emergency Operations Center (EOC)

Emergency Operations Facility (EOF)

Emergency News Center (ENC)

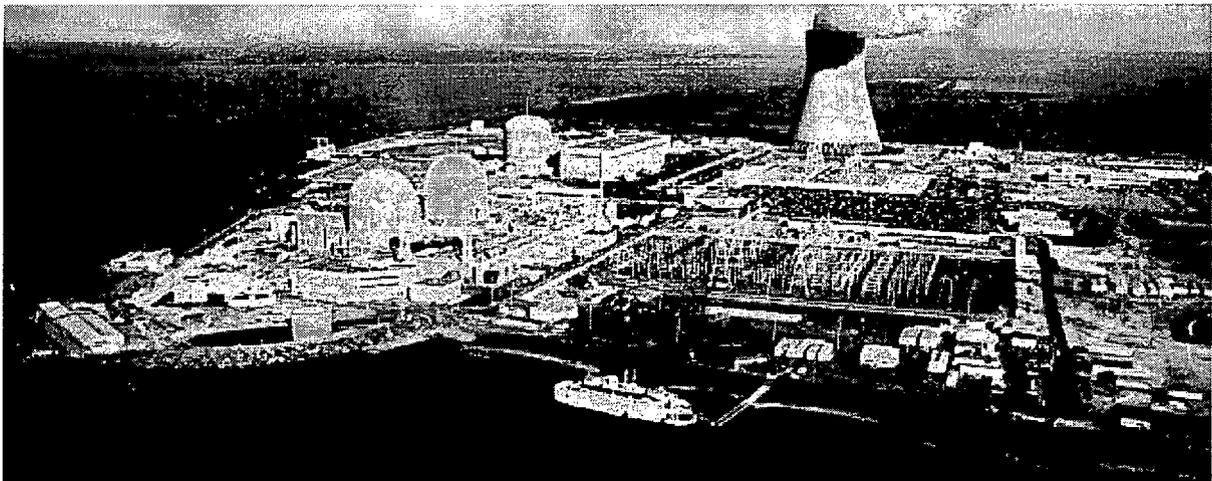
Delaware National Guard Headquarters (DNG HQ)

### County Jurisdictions

New Castle County EOC

Kent County EOC

### Site Map



## **APPENDIX F: IMPROVEMENT PLAN**

An Improvement Plan is not applicable to this report since there are no outstanding Deficiencies, Areas Requiring Corrective Action, or Planning Issues.

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