

**NEI 06-04  
Revision 0**

# **Nuclear Energy Institute**

## **Guideline for the Development of EP Drill and Exercise Threat-Based Scenarios**

**August 2006**

## ACKNOWLEDGEMENTS

This document was developed by the Nuclear Energy Institute EP Working Group and the EP Threat Scenario Task Force in conjunction with the Nuclear Regulatory Commission and Department of Homeland Security staffs. We appreciate the direct participation of Institute of Nuclear Power Operations, the NRC and the many utilities that contributed to the development of the guidance.

### EP Threat Scenario Task Force

Kevin Appel	Exelon Nuclear
Kevin Bruckerhoff	AmerenUE
James Michael Davis	Florida Power & Light Energy
Steve Erickson	Exelon Nuclear
Theresa Gildersleeve	Progress
Sue Perkins-Grew	Florida Power & Light Energy
Vernon Higaki	FirstEnergy
Cheryl Jenkins	FirstEnergy
Scott McCain	Exelon Nuclear
Alan Nelson	Nuclear Energy Institute
Martin Vonk	Nuclear Management Co.
Thelma Wiggins	Nuclear Energy Institute

### Industry Support

Brian Ashbrook	Southern California Edison
Kelle Barfield	Entergy
Beth Boesch	Nebraska Public Power District
Guy Cerullo	DTE Energy
Edward Conaway	South Texas Project
John Costello	Dominion
Luke Graessle	AmerenUE
Steve Higginbottom	Southern Nuclear Operating Co.
Marty Hug	Nuclear Energy Institute
Glenda Jardel	Exelon
Walter H. Lee	Southern Nuclear Operating Co.
Mark Lemke	Pacific Gas and Electric Co.
John Rayman	Dominion
William Renz	Dominion
Ron Rose	FirstEnergy
Jerry Sims	Southern Nuclear Operating Co.
Paul Sullivan	Nuclear Management Co.
Mary Ann Wilson	Entergy
David Young	Florida Power & Light Energy

### Pilot Sites and Host/Participating States

Diablo Canyon	California
Duane Arnold	Iowa, Illinois
North Anna	Virginia
Vermont Yankee	Vermont, New Hampshire, Massachusetts, North Carolina, Iowa, Illinois, Pennsylvania
Callaway	Missouri, Iowa, Illinois

### **Liaisons to the Task Force**

Joseph Anderson  
Randy Sullivan  
Vanessa Quinn  
Dan Wilcox

Nuclear Regulatory Commission  
Nuclear Regulatory Commission  
Department of Homeland Security  
Department of Homeland Security

### **NOTICE**

This report was prepared as an account of work sponsored by the Nuclear Energy Institute (NEI). Neither NEI nor any of its employees, members or consultants make any warranty, expressed or implied, or assume any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed in this report, or represent that its use would not infringe privately-owned rights.

The opinions, conclusions and recommendations set forth in this report are those of the authors and do not necessarily represent the views of NEI, its employees, members or consultants.

Because NEI is supported in part by federal funds, NEI's activities are subject to Title VI of the Civil Rights Act of 1964, which prohibits discrimination based on race, color or national origin, and other federal laws and regulations, rules and orders issued there under prohibiting discrimination. Written complaints of exclusion, denial of benefits or other discrimination of those bases under this program may be filed with the U.S. Nuclear Regulatory Commission, 11545 Rockville Pike Rockville, MD 20852 or any other appropriate federal regulatory agency or, among others, the Tennessee Valley Authority, Office of Equal Employment Opportunity, 400 West Summit Hill Drive, Knoxville, TN 37902.

**TABLE OF CONTENTS**

EXECUTIVE SUMMARY.....ii

1.0 PROGRAM DESCRIPTION..... 1.1

2.0 EXTENT OF PLAY ..... 2.1

3.0 CONTENT AND USE OF THE APPENDICES ..... 3.1

APPENDIX A – On-Site Objectives and Demonstration Criteria .....A.1

APPENDIX B – Off-Site Objectives and Demonstration Criteria ..... B.1

APPENDIX C – Force on Force to NEI Drill Objective Cross Reference.....C.1

APPENDIX D – Pilot Drill Lessons Learned .....D.1

APPENDIX E – Acronyms and Glossary..... E.1

## **EXECUTIVE SUMMARY**

The Nuclear Energy Institute (NEI) Emergency Preparedness and Security Working Groups developed this industry initiative to establish guidelines for the integration and demonstration of emergency responses to threat-based events. These include preparation and conduct of drills and exercises evaluating emergency response organizations' (ERO) response to the range and scope of threat-related events. In keeping with an organized approach wherein we evaluate, develop, train and then demonstrate the capability to perform an integrated response to a threat event, the NEI Task Force established a multiphase approach to achieve the final result.

The goals of the Task Force were to: (1) develop a set of on-site and off-site objectives, beyond existing traditional scenario objectives, which would allow demonstration and evaluation of activities related to threat-based scenarios and (2) develop guidelines for the development and conduct of threat-based drills and exercises.

The threat-based scenario does not focus on the response to a radiological release, however, protective-action decision-making and implementation should be considered. Those aspects are covered adequately in traditional reactor accident scenarios and are addressed by the majority of drills and exercises run by the industry.

This guideline is not intended to replicate the existing Force-on-Force Evaluated Exercise Program with respect to ongoing participation by the site security officers and an opposing force. Those actions, including coordination of off-site responders, are expected to be simulated through control messages/injects for this type of drill. This guideline is intended to provide a mechanism to demonstrate and evaluate activities related to threat-based scenarios that will replace the out-of-sequence emergency preparedness (EP) component of tabletop elements of the force-on-force evaluated exercises.

Despite the low likelihood of threat-based events at nuclear plants that cause damage to safety-related equipment, this guideline provides the opportunity for licensees to enhance key skills through drilling on the response to these events. This document provides guidance for the integration of threat events into the routine drill and exercise program.

### **Defining threat-based scenarios as major elements of the EP Program**

10 CFR 50.47(b)(14) states:

*Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.*

Nuclear Regulatory Commission (NRC) Bulletin 2005-02 defined threat-based scenarios as major elements of the program as follows:

*“It is recognized that the security at nuclear power plants is robust. In addition, current assessments indicate that licensee measures are available to mitigate the effects of terrorist acts. Consequently, such acts would not create an accident that causes a larger release or one that occurs more quickly than those already addressed by the EP planning basis. However, the condition of the plant after such an event could be very different from the usual condition practiced in more conventional nuclear power plant EP drills and exercises. In light of the foregoing and of the post-9/11 threat environment, licensees should exercise and test security-based EP capabilities as an integral part of the licensee’s emergency response capabilities.*

*... [S]ecurity-based events pose aspects that are different from the usual conditions traditionally practiced in EP drill and exercise programs. The emergency response organization is the primary organization trained to effectively mitigate damage caused by an event. As such, the NRC believes that the emergency response organization should practice response to security-based events.*

*NUREG-0654, Part II, and NUREG-0737, Supplement 1, refer to schedules for testing major elements of emergency plans by licensees over a six-year period. The NRC, per Inspection Procedure 82302, periodically reviews these major elements. The elements include activities applicable to security-based scenarios. ...*

*In light of the post-9/11 potential for security-based licensee events, it is the staff’s expectation that security-based EP activities will be demonstrated as major elements of the licensee’s emergency plan within the frequency committed to by the licensee.”*

Reasonable assurance is evaluated and granted by the NRC as a condition of licensing prior to a plant becoming operational. After that, reasonable assurance is reviewed on a continuing basis, both on-site and off-site, through inspection, exercise evaluation, Department of Homeland Security (DHS) plan/procedure reviews and, as applicable, the annual letter. Performance of threat-based scenarios as a demonstration of a major element of the program is a component of reasonable assurance and should be documented as appropriate (such as in the annual review letter).

Upon completion and distribution of this guideline, it is expected that each site will perform a two-part drill, including initial and post-event response outside of its scheduled NRC-/DHS-evaluated exercise. Utilities are encouraged to include as many off-site agencies in these non-evaluated drills as are willing to participate outside the normal process.

Long-term expectations following NRC and DHS endorsement of this document are that each site will conduct an NRC-/DHS evaluated exercise using a threat-based scenario once in each six-year cycle, replacing an existing reactor accident plume phase biennial evaluated exercise.

## 1.0 PROGRAM DESCRIPTION

### Implementation Guidance

This document outlines the conduct of drill and exercise activities that implement the Radiological Emergency Plan for events that involve hostile actions, their potential radiological releases/impacts, and the mitigation and recovery actions applicable to the scenario.

The scenario is constructed from a hypothetical threat to create the consequences needed to test the objectives. The scenario is divided into two parts to address the immediate and post-event response actions.

- The initial event response (Part 1) consists of an integrated emergency preparedness and representative off-site response to a threat-based scenario.
- The post-event response (Part 2) is a large-scale drill postulating that hostile actions have resulted in wide-scale damage to the plant/equipment and associated medical response.

### **Initial Event Response (Part 1)**

#### Scope

Integrated EP and off-site initial response to a threat-related event

#### Objectives

1. Classification/notification
2. On-site protective actions
3. Initial operator plant control actions
4. ERO response logistics
5. Off-site initial response

#### Differences From Current Focus

1. On-site protective actions
2. Augmentation logistics
3. Off-site resources
4. Security/Local Law Enforcement Agency interface

### **Post-Event Response (Part 2)**

#### Scope

Large-scale post-event response based on significant damage caused by a threat-related event

#### Objectives

1. Mitigation (plant, security, etc.)
2. Communications
3. Public information

#### Differences From Current Focus

1. Unified command and communications
2. Remote/alternate Emergency Response Facilities
3. Multi casualty medical response
4. Large-scale/area fire
5. 50.54(x) activities (Severe Accident Management Guidelines, security, etc.)
6. Incident of National Significance considerations

## 7. Crime scene considerations

The initiating threat events for the two parts do not have to be directly related. In other words, the exact circumstances of the second part do not have to be a direct result of the circumstances used for the first part. However, the intent should be to provide as much continuity between the scenario events as possible to minimize participant confusion.

A time break is recommended between the two parts to re-establish the event conditions and limit confusion among the responders. A detailed summary of events that would have occurred or are ongoing should be presented to participants prior to the commencement of Part 2.

Only one type of threat need be used for the Part 1 and Part 2 scenarios. A single drill or exercise is not intended to include three separate types of threats (i.e., water, land and airborne events). Different threat scenarios are expected to be used (alternated scenario threats) for full evaluation of the objectives from cycle to cycle.

### Initial Event Response (Part 1)

The purpose of the Part 1 scenario is to deal with receipt of threat information and perform the immediate and near term actions and communications associated with the event. The Part 1 scenario involves integrating the Emergency Plan response initiated by a threat-based event. The purpose of this drill is to challenge the ERO to:

- assess and classify the event
- notify off-site authorities
- provide initial protective actions (on-site and off-site)
- perform/discuss immediate actions in response to the hostile action
- provide augmented support to on-shift staff (ERO and off-site).

On-shift personnel (operations and security) and responding ERO members will demonstrate their initial actions to determine the most effective way(s) to respond to the threat-related event. Off-site responders would be expected to demonstrate their initial response actions, prioritize and allocate resources, and support the site in the control of the postulated hostile action.

### Post-Event Response (Part 2)

The purpose of Part 2 of the scenario is to manage the consequences of a threat based event resulting in large-scale/significant damage to the plant. The Part 2 scenario involves the coordinated response of both on-site and off-site organizations from the postulated aftereffects of a hostile action. Part 2 is expected to start when the simulated hostile act is largely resolved. Simulated plant conditions would be established, restricting access to areas of the facility due to simulated hostile-action plant damage states such as bomb/fire damage. Significant damage to the plant structures/equipment and/or electrical infrastructure should be simulated to challenge the ERO to restore the plant/core to a safe condition.

Major objectives for this part are:

- Event mitigation: Use of available/alternate resources or capabilities to replace/augment those assets impacted by the hostile action. Use of on-site security and offsite law enforcement resources or capabilities to integrate with the on-scene command and control structure to permit coordinated movement of responding resources.
- Communications: Coordination of resources necessary to cope with responding to damage from the event. This would include development of an ongoing on-scene command and control structure and implementation of the National Response Plan.
- Protective actions: Evaluate any change in on-site or off-site protective-action strategy consistent with the mitigation strategy.

Part 2 participation is expected to be limited to the licensee and those off-site agencies that provide direct support related to event consequences. An example of this would be the off-site medical support required to deal with multiple casualties caused by large fires and/or explosions.

### Scenario Development

Scenario content, including initiating events and subsequent outcomes, should be developed by a team consisting of licensee representatives and federal, state and local personnel (i.e., trusted agents). Members of off-site emergency management and law enforcement are encouraged to become trusted agents. The specific scenario details may be restricted (safeguards or need-to-know); in such cases, the scenario will be developed based on the input of the team members.

A major element in the development of threat-based scenarios is the material developed to allow the time jump between Parts 1 and 2. Since it is not within the scope of this guidance to include security and law enforcement engagement actions, those activities and the actions of the on-site and off-site response organizations must be predicted and developed as briefing items to set the stage for Part 2 actions to begin.

The threat-based scenarios are not designed to be exclusive. Traditional objectives can be included in threat-based drills, and threat-based objectives can be included in traditional radiological objectives. The scope, purpose and extent of any particular scenario will dictate the appropriate objectives and Demonstration Criteria. This allows a variety of options that can be used to keep scenarios diverse and engaging.

Consistent with current drill and exercise practices, it may not be necessary to include every objective or demonstration criteria in every scenario. While it is expected that a threat-based scenario being developed for an evaluated exercise contain the majority of the Appendix A, Table B, objectives and demonstration, certain elements may not be appropriate for all types of threat scenarios. For example, an airliner scenario would involve mass casualty but would not involve the expedited NRC notification. A land attack would involve the expedited NRC notification but may only result in fewer casualties.

The extent of play, type of event conditions and demonstration periodicity will drive the list of applicable evaluation elements for any particular scenario. It is recommended that utilities work with the NRC just as state agencies work with DHS to define the scenario extent of play prior to an evaluated exercise.

Each utility should consider the extent of play and evaluate the benefit of inclusion in the NRC performance indicator. Currently, NEI 99-02 does not allow participation credit without the direct linkage of classification, notification or PARs to key ERO members.

## 2.0 EXTENT OF PLAY

The focus of threat-based scenarios differ from the traditional radiological scenarios primarily as follows:

- specific integration of ERO, security and operations
- coordination of off-site support and plant ingress and/or egress
- recovery from the aftermath of a threat-based event.

The objectives and demonstration criteria described by this extent of play are designed to establish the minimum requirements for a threat-based scenario. Additional traditional objectives (as determined by an expanded scope through utility, state and local scenario development team agreement) may be used to drive further performance training and evaluation.

### General Scenario Concepts

The Part 1 scenario would begin in the site simulator with the normal control room shift staffing. A sequence of threat-based events then would be presented through scenario messages, phone calls or control-room indications. The events would progress through the attack on the plant and indicate significant damage.

Operations and security interface is a major element of this portion of the scenario. Security supervision is necessary for proper demonstration, although actions of officers can be performed via control cell. The following performance objectives would be included as applicable to the nature of the threat events:

- immediate notification of the NRC (for non-airborne scenarios)
- declarations to progress through at least the Site Area Emergency
- on-site protective actions appropriate for the threat conditions and classification level (i.e., protecting a minimum contingent of operations and maintenance personnel for recovery)
- notification of the Off-site Response Organizations (ORO)
- activation of the ERO (given the consequences of threat scenarios, the use of the on-site emergency response facilities may not be possible, which may drive demonstration of relocation from staging areas to alternate facilities and/or response activities from alternate facilities)
- initial site-access communications with local law enforcement agencies
- site conditions that may prevent normal access and transit due to fire, locked doors, security measures and areas of the site that have not yet been secured.

The duration of Part 1 of the scenario will vary, but could take up to two hours. The scenario then would pause and go through a time jump.

Part 2 of the scenario demonstrates coordination of off-site support and plant ingress and egress during a threat-based event and the response organization's ability to recover from the aftermath of a terrorist attack including protection of the core, reactor vessel and containment.

Participation of the ORO typically is greater for threat-based scenarios, however, off-site agencies participation should be bounded by their ability to perform and demonstrate applicable elements of the Exercise Evaluation Manual (EEM). Agencies whose roles are limited to monitoring activities should not be required to participate.

During this time jump, the threat event would have already damaged the plant. The postulated events that cause the conditions need only be explained as necessary for meaningful demonstration of response actions. There is no intention to simulate the ultimate defeat of the site security force or reveal targeting information. Rather, the scenario is used to postulate the failure of multiple safety systems, as is done in typical reactor event scenarios, but resulting from aspects associated with a threat-based event. However, scenarios shall never clearly identify target sets. Simulated equipment out-of-service and damage exceeding any single target set should be used. Due to the potential information value, drill related information should be marked as "Security Related Information – Withhold Under 10 CFR 2.390" in accordance with 10 CFR 2.390 paragraph (d)(1), although summaries without detailed component information may be released. Sharing experiences and insights with other emergency responders is expected. However, caution should be used when sharing information in a wider audience if it could include sensitive information.

Developing detailed scenario information describing the site conditions and response activities that would have occurred during the time jump are critical to both utility and off-site participants.

The ERO and ORO, located at a suitable location, are briefed on the status of the plant and their action(s) up to this point. The briefing would include information that the site was attacked. On-site emergency facilities may be declared safe for operation and activated (the Emergency Operations Facility and the Emergency Operations Centers may have been in the process of activation during the initial exercise play). Participants would receive information regarding the site status, the status of the actions that they reasonably could have been expected to have performed, and earned information that would provide simulated conditions in the aftermath of the attack that are scenario-specific (e.g., casualties, loss of equipment, loss of indication, damage from large fires, explosions and bullets, civil structure damage, rubble areas, areas of the plant not yet secure, etc.). All participants would be briefed on the actions taken in response to the Part 1 declaration (site area or general emergency) and protective actions that had been implemented and are in progress or complete. If the two parts of the scenario are not directly connected, then Part 2 must be constructed and presented in such a manner that it is obvious there is no connection between the initial attack and the extent of damage.

Following the briefing, the ERO would be allowed to prepare their areas to begin Part 2 of the scenario. The following performance objectives should be considered:

- ORO conduct of operations, including public protective actions without the benefit of resources called to the site (firefighting for aircraft and law enforcement for armed attack)
- control of site ingress and egress of ERO and ORO personnel
- responding to a significant number of personnel injuries and/or casualties, including the ability to coordinate intradepartmental interface, communications and protective equipment usage
- success-oriented scenarios (i.e., the ERO may succeed in preventing core damage and/or a radiological release if the proper actions are taken)
  - threat to core damage or other means for a potential radiological release (i.e., fuel pool event)
  - for aircraft scenarios, coordination of large firefighting efforts would be included, as well as identification of plant mitigative actions
- ERO would diagnose plant status, plan and execute mitigative actions, and implement plant recovery
  - mitigate site damage under the simulated conditions after an attack, either large fires or armed attack-type damage that might include areas of the site not yet secure
  - plant mitigative actions need not actually install and run equipment, but would identify the existence of equipment needed to implement ad hoc measures, its availability and functionality; means to use the equipment also would be demonstrated (e.g., the expertise is on scene).

*NOTE: These objectives are not meant to be an exhaustive list; other objectives could be added.*

Part 2 of the scenario is expected to take about four to five hours.

### Objectives

Performance directed toward the following objectives should be evaluated in both the initial and post-event response phases. Objectives specific to one part of the response are designated in the matrix.

1. Assess and classify the event. Facility should assess and classify the event in accordance with information provided and actual procedures/Emergency Action Levels. Personnel involved in the classification should be the same as those actually performing it during the activation of the ERO.
2. Notification of off-site authorities. This objective should be consistent with the extent of play. At minimum, the notification form/process must be completed and demonstrated to the point of actual communication.

3. Protective actions (initial event response):
  - *Protective action recommendations (PARs):* These actions should be discussed in accordance with approved procedures. Personnel involved in the PAR development process should be the same as those actually performing it during the activation of the ERO.
  - *On-site protective actions* These actions should be discussed in accordance with the objectives selected (e.g., security-related personnel protective actions, Public Address announcements, relocation of personnel, assembly, accountability, evacuation, etc.).
  - *Off-site protective actions* Initial PARs may be a component of the time jump. Decision-making and re-evaluation of conditions should be demonstrated by the ORO.
4. Protective actions (post-event response) Performance of these objectives should be consistent with objectives selected and the extent of play of off-site responders. Consideration should be consistent with the objectives in the initial event response drill but focused on the evaluation of any change in on-site or off-site protective action strategy consistent with the mitigation strategy.
5. Initial operator plant control actions These actions should be consistent with plant procedures.
6. ERO augmentation The decision-making process during initial response for personnel protection, as well as preparations for emergency response, should be reviewed.
7. Off-site initial response These actions are expected to demonstrate the response and initial decision-making of the ORO.
8. NRC incident response (optional) Actual participation is desired; however, control cells can be used to simulate NRC incident response.
9. Immediate actions in response to the event These actions should be consistent with those selected by the Exercise Development Team. Manipulations of plant equipment are expected to be simulated at or near actual plant equipment. Mock-ups to demonstrate specific performance of individual tasks should be evaluated for practicality and cost benefit. Performance of these objectives should include evaluation of the adequacy of personnel/equipment resources, and procedural guidance.
10. Augmented support These actions generally are expected to be demonstrated. ERO personnel should be notified in accordance with existing procedures. Alternate response facilities should be demonstrated at a frequency sufficient to ensure the effectiveness of the procedure and the understanding of the ERO.

11. Event mitigation Actual activities supporting this objective are expected to be simulated. Expected objective performance would be evaluation of options, evaluation of procedures/guidance, location of required equipment and a discussion of actual actions required for the task.
12. Communications These activities are expected to be performed by security, the on-site ERO and ORO. They would include the coordination of resources necessary to manage the event. This would include development of an ongoing on-scene incident command structure. Staffing of the long-term organization would not be required.

### 3.0 Content and Use of the Appendices

#### APPENDIX A: On-Site Objectives and Demonstration Criteria

Appendix A provides materials that have been developed to serve as a template of evaluation standards for threat-based scenarios. These materials are derived from NUREG-0654 (and supplements), NRC Inspection Procedure 82302, Force on Force evaluation criteria and the insights learned from the pilot drills.

The Contents of APPENDIX A are as follows:

Table A:	Comprehensive List of Performance Objectives	Page A.1
Table B:	Threat Based Event Demonstration Criteria	Page A.6
Table C1:	NEI 06-04 Objective Cross-References	Page A.11
Table C2:	Force on Force to NEI Drill Objective Cross Reference	Page A.12

NUREG-0654 is described as an acceptable method to meet the planning standards of 10 CFR 50.47(b) in Regulatory Guide 1.101. Performance objectives have been developed based on the elements of NUREG-0654 that are applicable to response organization performance. Each performance objective is then further divided into minor elements, called Demonstration Criteria (DCs).

Tables A and B include columns that depict the type of scenario the objective or DC is applicable to. The two scenario type categories are referred to as *Radiological* (from traditional REP scenarios) and *Security* for threat-based scenarios). For example, most Table A objectives are checked as applicable to traditional (Rad) scenarios. The Table A objectives that are required for a threat based scenarios would be checked as a threat-based (Sec) scenario.

#### **Table A**

Table A provides a comprehensive example of a performance objective structure based on the elements of NUREG-0654. It contains approximately sixty objectives within 14 planning standards (and an additional objective category involving mitigation).

Two items are associated with each objective:

- 1) Where possible, a reference to the NUREG-0654 performance element is shown under the Objective title in parentheses.
- 2) A completion frequency derived from either NUREG-0654 or IP-82302.

For example, in the table below, Emergency Communication is identified with planning standard 'F' in NUREG-0654. A major element of that planning standard is *Federal Communications*, which was given the objective # F.2 (cross-referenced to item F.1.c in Section II of NUREG-0654). An important part of Federal Communications is the proper use of the Emergency Notification System (ENS). A demonstration criterion, F.2.1, has been developed that would provide an evaluator with scope and success/failure criteria for the use of the ENS line.

PS	PS Title	Obj#	Obj Title	DC#	Demonstration Criteria
F.	Emergency Communications	F.2	Federal Communication Systems	F.2.1	Demonstrate the ability to perform the initial event notification as soon as possible following state/local notification, and always within 60 minutes of any classification.

**Table B**

Table B lists the Demonstration Criteria (within a standard NUREG-0654 framework) that were developed for threat-based scenarios. These DCs would be used alone or incorporated into an existing Drill & Exercise program to guide performance evaluation for a threat-based scenario.

APPENDIX B: Off-site Objectives and Demonstration Criteria

Appendix B, was taken from the Federal Register, Part II, Federal Emergency Management Agency, Radiological Emergency Preparedness: Exercise Evaluation Methodology: Notice. The “Evaluation Area/Sub-element/Criterion Table is a combination of the Federal Register Table 1 and Table 2 with columns added to indicate if each criteria is applicable to a Radiological or Security Exercise.

The following “Evaluation Area” descriptions and Extent of Play explanation was taken the Federal Register “Discussion of the New Evaluation Criteria” section and revised by state and local agency officials who participated or observed the pilot drills.

APPENDIX C: Pilot Drill Lessons Learned

Appendix C includes the insights gained by the response organizations during the conduct of the tabletop pilot drills. The purpose of this appendix is to assist in communicating those lessons learned to the industry.

**APPENDIX A: On-Site Objectives and Demonstration Criteria****TABLE A – Comprehensive List of Performance Objectives**

<b>Planning Standard / Objective (NUREG-0654 Criterion)</b>	<b>Objective Description</b>	<b>Freq</b>	<b>Rad</b>	<b>Sec</b>
<b>A — Assignment of Responsibility (Organization Control)</b>				
<b>A.1: Command and Control (A.1.d)</b>	Demonstrate the ability of the Emergency Director to provide overall direction (command and control) by initiating, coordinating and implementing timely and effective actions during the event.	1Y	✓	✓
<b>A.2: Operational Agreements (A.3)</b>	Demonstrate the coordination of the implementation of emergency measures and the exchange of information between the utility and Federal, State and local agencies and other support organizations having an emergency response role within the EPZ.	1Y	✓	
<b>A.3: Continuous Operations (A.4)</b>	Demonstrate the capability to establish and maintain continuous (24 hour) operations for a protracted period.	1Y	✓	
<b>B — On-site Emergency Organization</b>				
<b>B.1: Shift Response (B.1)</b>	Demonstrate the ability of the normal staff complement to perform the functions of the on-shift ERO.	1Y	✓	
<b>B.2: On-Shift Emergency Direction (B.2)</b>	Demonstrate the Shift Manager's ability to immediately and unilaterally initiate any emergency response action, including providing protective action recommendations to authorities responsible for implementing offsite emergency measures.	1Y	✓	
<b>B.3: Line of Succession (B.3)</b>	Demonstrate the ability to transfer overall command and control of the emergency response.	1Y	✓	
<b>B.4: Non-Delegable Responsibilities (B.4)</b>	Demonstrate the performance of authority of the non-delegable responsibilities.	1Y	✓	
<b>B.5: Minimum ERO Staffing Requirements (B.5)</b>	Demonstrate the ability to augment the on-shift response capabilities within a short period of time.	6 mo.	✓	
<b>B.6: Full ERO Staff Augmentation (B.7)</b>	Demonstrate the ability of management, administrative and technical support personnel to augment the plant staff in the areas of logistics support, technical support, government interface, and public information.	6 mo.	✓	✓
<b>B.7: ERO Support Organizations (B.8)</b>	Demonstrate the ability of specified contractor and private support organizations to provide technical assistance to or augment the ERO.	1Y	✓	
<b>B.8: Emergency Services Support Organizations (B.9)</b>	Demonstrate the ability to utilize onsite first aid / fire brigade personnel and to coordinate with required offsite emergency services (police, fire, ambulance, medical, hospital).	1Y	✓	✓

Planning Standard / Objective (NUREG-0654 Criterion)		Objective Description	Freq	Rad	Sec
<b>C — Emergency Response Support and Resources</b>					
<b>C.1: Federal Support (C.1)</b>	Demonstrate the ability to effectively integrate assistance resources from federal agencies to augment the plant's emergency response capabilities.	6Y	✓		
<b>C.2: Community Representatives (C.2.b)</b>	Demonstrate the ability to provide a liaison at each participating offsite governmental Emergency Operations Center (EOC).	6Y	✓		
<b>C.3: Radiological Support Services (C.3)</b>	Demonstrate the ability to effectively utilize and coordinate assistance from support radiological laboratories for monitoring and analysis services.	6Y	✓		
<b>D — Emergency Classification System</b>					
<b>D.1: Classification (D.1)</b>	Demonstrate the ability to recognize the initiating conditions for the EALs and to properly classify emergencies.	1Y	✓	✓	
<b>E — Notification Methods and Procedures</b>					
<b>E.1: Off-site Notification (E.1)</b>	Demonstrate the ability to notify the offsite Emergency Response Organizations consistent with the classification scheme including the verification of messages in a timely manner.	1Y	✓	✓	
<b>E.2: ERO Notification (E.2)</b>	Demonstrate the ability to alert, notify and mobilize ERO personnel.	1Y	✓	✓	
<b>E.3: Initial Notification Message Content (E.3)</b>	Demonstrate the ability to provide the required content for the initial notification messages timely and accurately.	1Y	✓		
<b>E.4: Follow-up Information Message Content (E.4)</b>	Demonstrate the ability to provide the required content for the follow-up information messages timely and accurately.	1Y	✓	✓	
<b>F — Emergency Communications</b>					
<b>F.1: State Communications Systems (F.1.a/b/d, N.2.a)</b>	Demonstrate the ability to operate the communications systems used by the ERO to provide information to the state(s).	1Y	✓		
<b>F.2: Federal Communications Systems (F.1.c/f, N.2.a)</b>	Demonstrate the ability to operate the communications systems used by the ERO to provide information to federal agency(s).	1Y	✓	✓	
<b>F.3: Utility Communications Systems (F.1.d, N.2.a)</b>	Demonstrate the ability to operate the communications systems used by the ERO to exchange information with other utility facility(s).	1Y	✓	✓	
<b>F.4: Back-up Communications Systems (F.1)</b>	Demonstrate to ability to operate the back-up communications systems used by the ERO.	6Y	✓		
<b>F.5: Medical Support Communications (F.2, N.2.c)</b>	Demonstrate the ability to perform communications with both fixed and mobile medical support unit.	1Y	✓		
<b>G — Public Education and Information</b>					
<b>G.1: JIC Support of Emergency Operations (G.3.a)</b>	Demonstrate the adequacy of the JIC to support emergency response activities.	1Y	✓	✓	
<b>G.2: Media Briefings (G.4.a)</b>	Demonstrate the ability of the corporate spokespersons to brief the media in a clear, accurate and timely manner.	6Y	✓	✓	

Planning Standard / Objective (NUREG-0654 Criterion)		Objective Description	Freq	Rad	Sec
<b>G.3:</b>	<b>Exchange of Public Information (G.4.b)</b>	Demonstrate timely exchange of public information among designated agency spokespersons.	6Y	✓	✓
<b>G.4:</b>	<b>Rumor Control (G.4.c)</b>	Demonstrate the ability to establish and operate rumor control in a coordinated fashion.	6Y	✓	✓
<b>G.5:</b>	<b>Release of Information (G.4.b)</b>	Demonstrate the ability to develop and release information to the media / public for a declared emergency.	6Y	✓	✓
<b>H — Emergency Facilities and Equipment</b>					
<b>H.1:</b>	<b>TSC Support of Emergency Operations (H.3)</b>	Demonstrate the adequacy of the TSC to support emergency response activities.	1Y	✓	
<b>H.2:</b>	<b>EOF Support of Emergency Operations (H.2)</b>	Demonstrate the adequacy of the EOF to support emergency response activities.	1Y	✓	
<b>H.3:</b>	<b>OSC Support of Emergency Operations (H.3/9)</b>	Demonstrate the adequacy of the OSC to support emergency response activities.	1Y	✓	
<b>H.4:</b>	<b>Timely Facility Activation (H.4)</b>	Demonstrate the ability to activate the emergency response facilities in a timely manner.	1Y	✓	
<b>H.5:</b>	<b>Alternate Sources for Analysis Information (H.6.a/b/c)</b>	Demonstrate the ability to acquire data from, or have access to, offsite monitoring and analysis equipment.	6Y	✓	
<b>H.6:</b>	<b>Meteorological Data (H.8, I.5)</b>	Demonstrate the ability to obtain current and forecasted meteorological information from primary as well as back-up and alternate sources.	1Y	✓	
<b>I — Accident Assessment</b>					
<b>I.1:</b>	<b>Accident Recognition and Assessment (I.1)</b>	Demonstrate the ability to provide initial values and continuing assessment throughout the course of an accident as well as the parameter values that correspond to the initiating conditions for EALs and PARs.	1Y	✓	✓
<b>I.2:</b>	<b>Core Damage Assessment (I.2)</b>	Demonstrate the ability to determine the extent of core failure based on station-specific assessment strategies and sampling.	1Y	✓	
<b>I.3:</b>	<b>Release and Dose Assessment (I.3, I.4, I.10)</b>	Demonstrate the capability to determine the magnitude of radioactive releases or perform dose assessments based on plant parameters, effluent monitors, field data and meteorological conditions.	6Y	✓	✓
<b>I.4:</b>	<b>Alternate Dose Assessment (I.6)</b>	Demonstrate the ability to determine the release rate and projected dose when effluent monitors are off-scale or inoperable.	6Y	✓	
<b>I.5:</b>	<b>FMT Support of Emergency Operations (I.7, I.8, N.2.d)</b>	Demonstrate the adequacy of the FMTs to support emergency response activities.	1Y	✓	
<b>I.6:</b>	<b>Plume Phase Monitoring (I.7, N.2.d)</b>	Demonstrate the ability to monitor radiological releases to the environment in the field.	1Y	✓	
<b>I.7:</b>	<b>Environmental Phase Monitoring (I.7, I.8, N.2.d)</b>	Demonstrate the ability to monitor post plume environmental conditions in the field.	1Y	✓	

Planning Standard / Objective (NUREG-0654 Criterion)		Objective Description	Freq	Rad	Sec
<b>I.8: Severe Accident Management (N/A)</b>		Demonstrate the ability to identify and implement appropriate SAM strategies.	6Y	✓	
<b>J — Protective Response</b>					
<b>J.1: Warning On-site Personnel (J.1)</b>		Demonstrate the means to alert individuals at the site and persons who may be in the public access areas within the owner-controlled area.	1Y	✓	✓
<b>J.2: Relocation of Non-Essential Personnel (J.2, J.4)</b>		Demonstrate the ability to evacuate and relocate on-site personnel to a relocation center at a Site Area Emergency or higher classification.	6Y	✓	✓
<b>J.3: Site Evacuee Monitoring (J.3, J.4)</b>		Demonstrate the capability for radiological monitoring and decontamination of personnel evacuated from the Protected Area.	6Y	✓	
<b>J.4: Assembly and Accountability (J.5)</b>		Demonstrate the ability to perform accountability for all individuals in the Protected Area within 30 minutes.	1Y	✓	
<b>J.5: Protective Clothing (J.6.a/b)</b>		Demonstrate the availability and use of respiratory protection and protective clothing for onsite emergency response personnel.	1Y	✓	
<b>J.6: KI (J.6.c)</b>		Demonstrate the availability and use of potassium iodide (KI) for utility emergency response personnel.	6Y	✓	
<b>J.7: PARs (J.7)</b>		Demonstrate the ability to recommend protective actions to appropriate offsite authorities.	1Y	✓	
<b>J.8: On-site Protective Actions (N/A)</b>		Demonstrate the ability to control movement and access of all personnel within, to and from the site during or after a threat-based event.	6Y		✓
<b>K — Radiological Exposure Control</b>					
<b>K.1: Emergency Worker Exposure Controls (K.1, K.2)</b>		Demonstrate the methods used to implement emergency exposure guidelines and the ability to authorize emergency workers to receive doses in excess of 10 CFR 20.	1Y	✓	
<b>K.2: Exposure Monitoring (K.3)</b>		Demonstrate the ability to control and track emergency worker radiation exposure.	1Y	✓	
<b>K.3: Personnel Con/Decontamination Controls (K.5a/b)</b>		Demonstrate the use of action levels for determining the need for decontamination, and perform decontamination and provide for waste disposal.	1Y	✓	
<b>K.4: Area Contamination Controls (K.6.a/c N.2.e.1)</b>		Demonstrate contamination control practices.	6 mo.	✓	
<b>K.5: Habitability Controls (K.6.b)</b>		Demonstrate the capability to minimize ERO internal contamination through ERF habitability controls and controlling the intake of drinking water and food supplies.	1Y	✓	
<b>K.6: Decontamination of Site Evacuees (K.7, J.4)</b>		Demonstrate the ability to decontaminate evacuees from the site including the capacity to provide additional clothing.	6Y	✓	

Planning Standard / Objective (NUREG-0654 Criterion)		Objective Description	Freq	Rad	Sec
<b>L — Medical and Public Health Support</b>					
<b>L.1:</b>	<b>Hospital Response (L.1, N.2.c)</b>	Demonstrate the radiological capabilities of local and backup hospitals.	1Y	✓	
<b>L.2:</b>	<b>First Aid (L.2, K.1, N.2.c)</b>	Demonstrate the ability to provide first aid treatment onsite.	1Y	✓	✓
<b>L.3:</b>	<b>Contaminated Injured Transportation (L.4, N.2.c)</b>	Demonstrate the capability to transport a contaminated injured person off-site.	1Y	✓	
<b>M — Recovery &amp; Reentry Planning / Post-Accident Operations</b>					
<b>M.1:</b>	<b>Event Termination (M.1)</b>	Demonstrate the capability to terminate the emergency and enter into recovery including informing the State of the opportunity to relax protective actions.	6Y	✓	
<b>M.2:</b>	<b>Recovery Organization (M.2)</b>	Demonstrate the ability to identify and establish a recovery organization.	6Y	✓	
<b>M.3:</b>	<b>Recovery Notifications (M.3)</b>	Demonstrate the methods used to inform members of the response organizations of entry into recovery, including any organizational structural changes that will be implemented.	6Y	✓	
<b>Q — Plant Control and Accident Mitigation</b>					
<b>Q.1:</b>	<b>Plant Control and Accident Mitigation (N/A)</b>	Demonstrate assessment, integration and coordination of the emergency and security procedures.	6Y		✓
<b>Q.2:</b>	<b>Alternative Plant Control (N/A)</b>	Demonstrate the ability to operate critical equipment from alternate plant locations or in abnormal configurations to mitigate the impact of the threat based event.	6Y		✓

**TABLE B - Threat Based Event Demonstration Criteria**

Planning Standard/Objective (NUREG-0654 Reference)/Demonstration Criteria		Rad	Sec
<b>A — Assignment of Responsibility (Organization Control)</b>			
<b>A.1: Command and Control (A.1.d)</b>	<b>Demonstrate the ability of the emergency director to provide overall direction (command and control) by initiating, coordinating and implementing timely and effective actions during the event.</b>		
A.1.1:	Demonstrate command and control of the ERO and ERO actions, per the Emergency Plan, for the threat event presented.		✓
A.1.2:	Demonstrate the interface between the emergency director and the incident commander, including their roles responsibilities and authorities as conditions change.		✓
A.1.3:	Demonstrate the control, coordination and prioritization of on-site and off-site security resources for near-term response (e.g., bomb squad and helicopters for search operations).		✓
<b>B — On-site Emergency Organization</b>			
<b>B.6: Full ERO Staff Augmentation (B.7)</b>	<b>Demonstrate the ability of management, administrative and technical support personnel to augment the plant staff in the areas of logistics support, technical support, government interface and public information.</b>		
B.6.1:	Demonstrate the ability to identify any additional resources (e.g., operations, firefighting, maintenance, and engineering) that are necessary to supplement the ERO response as necessary.	✓	✓
<b>B.8: Emergency Services Support Organizations (B.9)</b>	<b>Demonstrate the ability to utilize on-site first aid/fire brigade personnel and to coordinate with required off-site emergency services (police, fire, ambulance, medical, hospital).</b>		
B.8.1:	Demonstrate the ability to coordinate notification of LLEA, state police and FBI and their staging/entrance to the site.		✓
B.8.2:	Demonstrate the ability to coordinate notification of off-site fire/rescue organizations and their staging/entrance to the site.	✓	✓
B.8.3:	Demonstrate the ability to coordinate notification of off-site medical organizations and their staging/entrance to the site.	✓	✓
B.8.4:	Demonstrate the control of site access for various responders, recognizing the need to ensure security measures are taken to protect the site from additional intrusion, coordinating with the off-site Incident Commander (IC).		✓
B.8.5:	Demonstrate the medical emergency response for an event involving multiple casualties.		✓
B.8.6:	Demonstrate the process for coordinating the response (on-site and off-site responders as applicable) to a large scale on-site fire.		✓
B.8.7:	Demonstrate the process for responding to an on-site fire while a hostile action is in progress and after an event for the following (as applicable to the scenario): <ul style="list-style-type: none"> <li>• multiple facilities</li> <li>• water pressure issues</li> <li>• mutual aid resource requests</li> <li>• vital equipment and/or facilities</li> <li>• structural collapse</li> <li>• fire protection measures for safety-related equipment.</li> </ul>		✓

Planning Standard/Objective (NUREG-0654 Reference)/Demonstration Criteria		Rad	Sec
<b>D — Emergency Classification System</b>			
<b>D.1: Classification (D.1)</b>	<b>Demonstrate the ability to recognize the initiating conditions for the EALs and to properly classify emergencies.</b>		
D.1.1:	Demonstrate the ability to accurately determine the appropriate Emergency Action Level associated with a parameter or symptom when recognized.	✓	✓
D.1.2:	Demonstrate the ability to declare the correct Emergency Action Level within 15 minutes of the time that the event condition was present.	✓	✓
D.1.3:	Demonstrate the ability to maintain an awareness of changing plant conditions and their impact on operational procedure requirements (abnormal and emergency operating and Emergency Plan implementing procedures), including the tracking of concurrent EALs and potential escalation pathways.	✓	✓
D.1.4:	Demonstrate the ability to recognize changes in event conditions that impact the Emergency Action Levels, including the tracking of concurrent EALs and potential escalation pathways.	✓	✓
<b>E — Notification Methods and Procedures</b>			
<b>E.1 — Off-site Notification (E.1)</b>	<b>Demonstrate the ability to notify the off-site emergency response organizations consistent with the classification scheme including the verification of messages in a timely manner.</b>		
E.1.1:	Demonstrate the ability to perform the accelerated NRC notification process in a timely (within 15 minutes) and accurate manner in the event the NRC is not aware of the threat based event.		✓
E.1.2:	Demonstrate the ability to complete the emergency notification forms with correct information for conditions present.	✓	✓
E.1.3:	Demonstrate the ability to initiate calls to state and/or local agencies within 15 minutes of declaration or change in PAR.	✓	✓
<b>E.2: ERO Notification (E.2)</b>	<b>Demonstrate the ability to alert, notify and mobilize ERO personnel.</b>		
E.2.1:	Demonstrate the staffing process for primary/alternate emergency response facilities (consider timing, availability, appropriateness, personnel, location) consistent with the scenario conditions.	✓	✓
E.2.2:	Demonstrate the communications methods used for directing ERO to alternate facilities when appropriate.		✓
E.2.3:	Demonstrate the ability to perform actions to notify and mobilize ERO personnel who are on-site at the time of the event.	✓	✓
E.2.4:	Demonstrate the ability to perform actions to notify and mobilize ERO personnel who are off-site at the time of the event (using the primary and/or backup method as applicable).	✓	✓
E.2.5:	Demonstrate, by sample or other means, that ERO personnel received correct activation messages and understood the required actions for the event.	✓	✓
<b>E.4: Follow-up Information Message Content (E.4)</b>	<b>Demonstrate the ability to provide the required content for the follow-up information messages timely and accurately.</b>		
E.4.1:	Update state and local agencies as appropriate for the event.	✓	✓
<b>F — Emergency Communications</b>			
<b>F.2: Federal Communications Systems (F.1.c/f, N.2.a)</b>	<b>Demonstrate the ability to operate the communications systems used by the ERO to provide information to federal agency(s).</b>		
F.2.1:	Demonstrate the ability to perform the initial event notification as soon as possible following state/local notification, and always within 60 minutes of any classification.	✓	✓
F.2.2:	Demonstrate the methods used to perform periodic and accurate updates to the NRC and transition to open-line communications with the NRC as applicable to the scenario.	✓	✓
F.2.3:	Maintain communications with the NRC via ENS and HPN lines as required by the event.	✓	✓

Planning Standard/Objective (NUREG-0654 Reference)/Demonstration Criteria		Rad	Sec
F.2.4: Support the NRC Executive Team via the management counterpart link as requested.		✓	✓
<b>F.3: Utility Communications Systems (F.1.d, N.2.a)</b>	<b>Demonstrate the ability to operate the communications systems used by the ERO to exchange information with other utility facility(s).</b>		
F.3.1: Conduct security/operations communications as necessary to ensure information is shared adequately to allow for informed classification and protective action decision-making.			✓
F.3.2: Demonstrate the methods for communication and support between emergency response facilities/locations and alternate facilities when used.			✓
F.3.3: Verify communications links are operable for internal and external communications.		✓	✓
<b>G — Public Education and Information</b>			
<b>G.1: Joint Information Center (JIC) Support of Emergency Operations (G.3.a)</b>	<b>Demonstrate the adequacy of the JIC to support emergency response activities.</b>		
G.1.1: Establish contact with involved agencies to request a spokesperson be provided to the JIC.			✓
G.1.2: Demonstrate the ability to address or direct media personnel responding to locations other than the JIC.			✓
G.1.3: Demonstrate that federal, state and local representatives to the JIC are integrated appropriately into activities.			✓
<b>G.2: Media Briefings (G.4.a)</b>	<b>Demonstrate the ability of the corporate spokespersons to brief the media in a clear, accurate and timely manner.</b>		
G.2.1: Demonstrate that specific threat information is presented by the appropriate federal, state or local agency.		✓	✓
<b>G.3: Exchange of Public Information (G.4.b)</b>	<b>Demonstrate timely exchange of public information among designated agency spokespersons.</b>		
G.3.1: Demonstrate that threat based or sensitive information is screened prior to dissemination (i.e., SGI, crime).			✓
G.3.2: Demonstrate the ability to coordinate emergency public information with appropriate response organizations.		✓	✓
G.3.3: Conduct effective pre-media briefings, to include coordination of appropriate information and prioritization of dissemination.		✓	✓
<b>G.4: Rumor Control (G.4.c)</b>	<b>Demonstrate the ability to establish and operate rumor control in a coordinated fashion.</b>		
G.4.1: Demonstrate the ability to identify and address rumors and misinformation related to the threat based event.			✓
<b>G.5: Release of Information (G.4.b)</b>	<b>Demonstrate the ability to develop and release information to the media / public for a declared emergency.</b>		
G.5.1: Demonstrate the ability to pursue and communicate plant status and information of public interest, including plant radiological status, to the media.		✓	✓
G.5.2: Demonstrate the process for approval of news statements when the event is under federal jurisdiction.			✓
G.5.3: Verify that "safeguards information" was not communicated in the process of disseminating emergency public information.			✓
<b>I — Accident Assessment</b>			
<b>I.1: Accident Recognition and Assessment (I.1)</b>	<b>Demonstrate the ability to provide initial values and continuing assessment throughout the course of an accident, as well as the parameter values that correspond to the initiating conditions for EALs and PARs.</b>		
I.1.1: Demonstrate communications between security personnel and the emergency director that provides clear status for decision-making.			✓
I.1.2: Demonstrate that security personnel accurately assess the simulated events for decision-making.			✓
I.1.3: Demonstrate the ability to identify off-normal plant or radiological conditions.		✓	✓

Planning Standard/Objective (NUREG-0654 Reference)/Demonstration Criteria		Rad	Sec
<b>I.3: Release and Dose Assessment (I.3, 4, 10)</b>	<b>Demonstrate the capability to determine the magnitude of radioactive releases or perform dose assessments based on plant parameters, effluent monitors, field data and meteorological conditions.</b>		
I.3.1:	Demonstrate the ability to perform dose projections (what-ifs, hypotheticals, etc.) based on predicted core and containment failure modes related to the threat scenario.		✓
I.3.2:	Demonstrate the ability to assess the consequences of dose projections, including the impact on existing or potentially expanded PARs (as applicable).	✓	✓
<b>J — Protective Response</b>			
<b>J.1: Warning On-site Personnel (J.1)</b>	<b>Demonstrate the means to alert individuals at the site and persons who may be in the public access areas within the owner-controlled area.</b>		
J.1.1:	Demonstrate the use of broadcast announcements to on-site personnel (timing and content).	✓	✓
<b>J.2: Relocation of Non-essential Personnel (J.2, 4)</b>	<b>Demonstrate the ability to evacuate on-site personnel to a relocation center at a site area emergency or higher classification.</b>		
J.2.1:	Demonstrate the ability to conduct accountability for plant personnel relocated from the site to the alternate emergency response facilities or staging area.		✓
<b>J.8: On-site Protective Actions (N/A)</b>	<b>Demonstrate the ability to control movement and access of all personnel within, to and from the site during or after a threat-based event.</b>		
J.8.1:	Demonstrate the ability to conduct protective action decision-making for on-site personnel under threat or attack conditions for: <ul style="list-style-type: none"> <li>• immediate personnel protective actions</li> <li>• assembly</li> <li>• accountability</li> <li>• site personnel release/evacuation</li> <li>• alternate strategies.</li> </ul>		✓
J.8.2:	Demonstrate prioritization and protective considerations for emergency response teams dispatched during or after threat based events (e.g., personnel rescue, casualty recovery or event mitigation). Based on the scenario, these may include: <ul style="list-style-type: none"> <li>• radiological</li> <li>• hazmat</li> <li>• fire</li> <li>• security/implementation of “two-person rule”</li> <li>• control of limited personnel movement under a “take cover” order.</li> </ul>		✓
J.8.3:	Demonstrate the ability to coordinate site movement following the removal of a “take cover” order.		✓
<b>L — Medical and Public Health Support</b>			
<b>L.2: First Aid (L.2, K.1, N.2.c)</b>	<b>Demonstrate the ability to provide first aid treatment on-site.</b>		
L.2.1:	Demonstrate the process for coordinating the onsite medical team response.	✓	✓

Planning Standard/Objective (NUREG-0654 Reference)/Demonstration Criteria		Rad	Sec
<b>Q — Plant Control and Accident Mitigation</b>			
<b>Q.1: Plant Control and Accident Mitigation (N/A)</b>	<b>Demonstrate assessment, integration and coordination of the emergency and security procedures.</b>		
Q.1.1:	Determine the appropriate mitigating actions based on the hostile action imposed.		✓
Q.1.2:	Demonstrate the ability to identify actions necessary to prevent, limit or stop a release of radioactive materials: <ul style="list-style-type: none"> <li>with limitations on ERO and ERF availability</li> <li>other actions (i.e., containment spray, etc.).</li> </ul>		✓
Q.1.3:	Demonstrate the ability to determine the actions to protect and/or operate critical equipment outside the control room, including: <ul style="list-style-type: none"> <li>ingress/egress</li> <li>prioritization</li> <li>control of plant personnel movement.</li> </ul>		✓
<b>Q.2: Abnormal Plant Controls (N/A)</b>	<b>Demonstrate the ability to operate critical equipment from alternate plant locations or in abnormal configurations to mitigate the impact of the threat based event.</b>		
Q.2.1:	Demonstrate the ability to determine the actions needed to mitigate the event without the use of the normal on-site or nearby emergency response facilities.		✓
Q.2.2:	Demonstrate the ability to implement 50.54(x) in a threat-based event as appropriate.		✓
Q.2.3:	Demonstrate the actions to evacuate the CR and control the plant from the remote stations (as applicable).		✓
Q.2.4:	Demonstrate the ability to identify actions to mitigate/prevent fuel damage in the core under the current plant configuration, including: <ul style="list-style-type: none"> <li>use of normal, abnormal or emergency procedures and accident guidelines</li> <li>water usage (for refilling tanks and firefighting)</li> <li>power (to vital equipment or portable equipment).</li> </ul>		✓
Q.2.5:	Demonstrate the ability to identify actions to mitigate/prevent fuel damage in the used fuel storage area under the current plant configuration, including: <ul style="list-style-type: none"> <li>use of normal, abnormal or emergency procedures accident guidelines</li> <li>water usage (for refilling tanks and firefighting)</li> <li>Power (to vital equipment or portable equipment).</li> </ul>		✓

**TABLE C1 - NEI 06-04 Objective Cross-References**

<b>Objective</b>	<b>Reference Document Title</b>	<b>Use Restrictions</b>
E.1.1	Air Threat Advisory, January 2005	Safeguards
E.1.3	RIS 2004-15, EP Lessons Learned – Post-9/11	Official Use Only
C.2.3	RIS 2004-15, EP Lessons Learned – Post-9/11	Official Use Only
E.2	ICM Order, February 2002 – Section B.5.b	Unrestricted
B.8	ICM Order, February 2002 – Section B.5.b	Unrestricted
	RIS 2004-15, EP Lessons Learned – Post-9/11	Official Use Only
F.3	ICM Order, February 2002 – Section B.5.b	Unrestricted
J.8.1	Air Threat Advisory, January 2005	Safeguards
	EPEAL Advisory, March 2005	Unrestricted
J.8.2	ICM Order, February 2002 – Section B.5.b	Unrestricted
J.8.3	ICM Order, February 2002 – Section B.5.b	Unrestricted
Q.1.2	ICM Order, February 2002 – Section B.5.b	Unrestricted
Q.1.4	Air Threat Advisory, January 2005	Safeguards
	EPEAL Advisory, March 2005	Unrestricted
I.1.3	ICM Order, February 2002 – Section B.5.b	Unrestricted
I.1.4	ICM Order, February 2002 – Section B.5.b	Unrestricted
I.1.5	ICM Order, February 2002 – Section B.5.b	Unrestricted

**TABLE C2 - Force on Force to NEI Drill Objective Cross Reference**

EP Task	Expected Actions	FoF Drill Item #	Proposed NEI Security Drill			
			Obj / DC	Part 1	Part 2	
Initial and follow-on EAL classifications	Classify the event within 15 minutes of conditions being present.	3a ft note	D.1	D.1.2	✓	✓
Notification Form completion	Ensure radiological emergency communications forms contain correct information for conditions present.	2a	E.1	E.1.2	✓	
Notification of off-site authorities	Initiate calls to state and county officials within 15 minutes of declaration.	2a	E.1	E.1.3	✓	
Notification of NRC	Call within 60 minutes of classification.	2a	F.2	F.2.1	✓	
Activation of ERO notification system	Call the communication system to set off pre-selected notifications.	2b	E.2	E.2.3 E.2.4	✓	
Public address system announcements	Throughout the event, determine page system announcements that would be made and what would be said.	2c	J.1	J.1.1	✓	
On-site PARs	Include assembly, accountability and site evacuation in decision-making for on-site PARs.	3b	J.8	J.8.1	✓	
Security / OPs communications	Conduct communications as necessary to allow for informed EAL decision-making.	2d	F.3	F.3.1 F.3.2 F.3.3	✓	
Off-site PARs	Off-site PARs as required by declaration and as necessary if off-site doses exceed their limits.	3a	J.7	J.7.1		
Communication of off-site PARs	Notify state and county of PARs within 15 minutes of determination.	2a	E.1	E.1.3	✓	✓
Site medical response	Respond to a medical emergency on-site while a threat event is in progress and following an event.	4b	B.8	B.8.7		✓
			L.2	L.2.1		✓
Radiological release assessment	Assess the magnitude of a release if one were to occur. Determine if release warrants protective action.	3c	I.3	I.3.2		✓
Coordination of post-threat event activities	Coordinate as necessary with security shift supervisor to make decisions to conduct site assembly and accountability. Ensure affected areas of plant are secured as required.	3b, 5a	J.8	J.8.1	✓	

**APPENDIX B: Off-site Objectives and Demonstration Criteria**

<b>Evaluation Area/Sub-element/Criterion</b>	<b>NUREG-0654 Criteria</b>	<b>Frequency</b>	<b>Rad</b>	<b>Sec</b>
<b>1 — Emergency Operations Management</b>				
1.a: Mobilization				
1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner.	A.4; D.3, 4; E.1, 2; H.4	Every Exercise	✓	✓
1.b: Facilities				
1.b.1: Facilities are sufficient to support the emergency response	H.3	Every Exercise	✓	✓
1.c: Direction and Control				
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.	A.1.d; A.2.a, b	Every Exercise	✓	✓
1.d: Communications Equipment				
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.	F.1, 2	Every Exercise	✓	✓
1.e: Equipment and supplies to support operations				
1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations.	H.7, 10; J.10.a, b, e; J.11; K.3.a	Every Exercise	✓	✓
<b>2 — Protective Action Decision-Making</b>				
2.a: Emergency worker exposure control				
2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers, including provisions to authorize radiation exposure in excess of administrative limits or protective action guides.	J.10.e, f; K.4	Every Exercise	✓	✓
2.b: Radiological assessment and protective action recommendations and decisions for the plume phase of the emergency				
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.	I.8, 10; Supp. 3	Every Exercise	✓	
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).	J.9; J.10.f, m	Every Exercise	✓	✓

Evaluation Area/Sub-element/Criterion	NUREG-0654 Criteria	Frequency	Rad	Sec
2.c: Protective Action Decisions Consideration for the Protection of Special Populations				
2.c.1: Protective action decisions are made, as appropriate, for special population groups.	J.9; J.10.d, e	Every Exercise	✓	✓
2.d: Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway				
2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria.	J.9, 11	6 Year	✓	
2.e: Radiological Assessment and Decision-Making Concerning Relocation, Re-entry and Return				
2.e.1: Timely relocation, re-entry and return decisions are made and coordinated as appropriate, based on assessments of radiological conditions and criteria in the ORO's plan and/or procedures.	I.10; J.9; M.1	6 Year	✓	
<b>3—Protective Action Implementation</b>				
3.a: Implementation of Emergency Worker Exposure Control				
3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plan and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart.	K.3.a, 3.b	Every Exercise	✓	✓
3.b: Implementation of KI Decision				
3.b.1: KI and appropriate instructions are made available should a decision to recommend use of KI be made. Appropriate records are kept on the administration of KI for emergency workers and institutionalized individuals.	J.10.e	6 Year	✓	✓
3.c: Implementation of Protective Actions for Special Populations				
3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions.	J.10.c, d, g	6 Year	✓	✓
3.c.2: OROs/school officials decide upon and implement protective actions for schools.	J.10.c, d, g	6 Year	✓	✓
3.d: Implementation of Traffic and Access Control				
3.d.1: Appropriate traffic and access control is established and accurate instructions are provided to traffic and access control personnel.	J.10.g, j	Every Exercise	✓	✓
3.d.2: Impediments to evacuation are identified and resolved.	J.10.k	Every Exercise	✓	✓
3.e: Implementation of Ingestion Pathway Decisions				
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.	J.9, 11	6 Year	✓	

Evaluation Area/Sub-element/Criterion	NUREG-0654 Criteria	Frequency	Rad	Sec
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.	J.9, 11	6 Year	✓	
3.f: Implementation of Relocation, Re-entry and Return Decisions				
3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented.	M.1, 3	6 Year	✓	
<b>4—Field Measurement and Analysis</b>				
4.a: Plume Phase Field Measurement and Analyses				
4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates.	H.10 I.7, 8, 9	Full-Participation Exercise	✓	
4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure.	I.8, 11; J.10.a; H.12	Full-Participation Exercise	✓	✓
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.	I.9	Full-Participation Exercise	✓	
4.b: Post-Plume Phase Field Measurements and Sampling				
4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (for example, food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making.	I.8; J.11	6 Year	✓	
4.c: Laboratory Operations				
4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions.	C.3; J.11	6 Year	✓	
<b>5—Emergency Notification and Public Information</b>				
5.a: Activation of the Prompt Alert and Notification System				
5.a.1: Activities associated with primary alerting and notifying the public are completed in a timely manner following the initial decision by authorized off-site emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include the elements required by current federal guidance.	10 CFR Part 50, Appendix E.IV.D; E.5, 6, 7	Every Exercise	✓	
5.a.2: [Reserved]				

Evaluation Area/Sub-element/Criterion	NUREG-0654 Criteria	Frequency	Rad	Sec
5.a.3: Activities associated with FEMA-approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized off-site 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.	Appendix 3: B.2.c; E.6	Every Exercise	✓	
5.b: Emergency Information and Instructions for the Public and the Media				
5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner.	E.5, 7; G.3.a; G.4.c	Every Exercise	✓	✓
<b>6—Support Operation/Facilities</b>				
6.a: Monitoring and Decontamination of Evacuees and Emergency Workers and Registration of Evacuees				
6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources and trained personnel to provide monitoring, decontamination and registration of evacuees and/or emergency workers.	J.10.h; J.12; K.5.a	6 Year	✓	
6.b: Monitoring and Decontamination of Emergency Worker Equipment				
6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontaminating emergency worker equipment, including vehicles.	K.5.b	6 Year	✓	
6.c: Temporary Care of Evacuees				
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 ensure that evacuees have been monitored for contamination and have been decontaminated (if necessary) before entering congregate care facilities.	J.10.h; J.12	6 Year	✓	
6.d: Transportation and Treatment of Contaminated Injured Individuals				
6.d.1: The facility/ORO has the appropriate space, adequate resources and trained personnel to provide transport and medical services, and monitor decontamination, to contaminated injured individuals.	F.2; H.10; K.5.a, b; L.1; L.4	Every Exercise	✓	

## 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)

#### 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. Additionally, for a threat-based event, the ability of local law enforcement to promptly notify the emergency management organization of the event when the information is passed immediately from station security should be demonstrated. 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 while exercising flexibility in accordance with the level of the incident. For a threat-based event, the setup and staffing process for the on- or near-site Incident Command Post should be demonstrated. 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. All activities must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

An integral part of the response to a threat-based scenario at a nuclear power plant would be within the auspices of the federal government, i.e. the FBI, NRC and DHS. The state and local governments need to have adequate play from members of these departments to fully test the response and capabilities they would request, as well as those which the incident itself requires. For instance, many of the facilities necessary to carry out the on-scene response cannot be fully tested for this type of scenario without the presence of members of the federal family. Interface with these agencies throughout the response is key to the majority of the criteria necessary to support the scenario for a threat-based event. In addition, specialized teams such as the Civil Support Team, National Guard Initial and Rapid Response Teams, SWAT, Urban Search and Rescue, or Bomb Squad may be part of the response.

It also is important to note that the states realize it is unrealistic for these federal agencies to support fully each of the threat-based exercises; however, their participation still is important. Consideration should be given for a greater level of federal participation at initial exercises (i.e., one reactor site per state) and partial support for the remaining sites to complete the necessary cycle. This is similar to the approach used for ingestion pathway exercises.

*Sub-Element 1.b—Facilities*

*Criterion 1.b.1:* Facilities are sufficient to support the emergency response. (NUREG–0654, H.3)

Extent of Play

Facilities will be specifically evaluated for this criterion only 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). Facilities must be set up based on the ORO's plans and procedures and demonstrated as they would be used in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

The effective use of the Incident Command Post, muster or staging points of ORO response including law enforcement, medical support, and fire departments should be demonstrated in a threat-based event, including verification that communications links are operable for internal and external communications.

*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; A.2.a, b)

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. All activities associated with direction and control must be performed based on the ORO's plans and procedures while exercising flexibility in accordance with the level of the incident or completed as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

For a threat-based exercise, essential functions of the response effort listed in the previous paragraph at the Unified Command Post and/or Incident Command Post (if established in separate locations) would be evaluated. Coordination with the nuclear power plant's command structure—as well as with support provided to the station, would be the primary focus of this extent of play.

The role of the federal agencies in this type of incident cannot be understated, and their participation is integral to the success of the exercise. Federal agency involvement may have an impact on decisions relative to state and local actions—predominately the FBI and its investigation. The exercises also should address the role of mutual aid and EMAC to the incident, as well as specific requests for federal assistance. Utilization of NIMS as well as the "Rules of Engagement" for the National Guard should be considered. There may be a need for discussion amongst law enforcement (FBI) regarding the chain of custody for evidence and crime scene preservation.

*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)

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 systems are 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 ORO's 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. ORO's should ensure that a coordinated communication link for fixed and mobile medical support facilities exists. The specific communications capabilities of ORO's 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, as negotiated in the extent-of-play agreement. All activities associated with the management of communications capabilities must be demonstrated based on the ORO's plans and procedures, while exercising flexibility in accordance with the level of the incident or completed as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

*Sub-Element 1.e—Equipment and Supplies to Support Operations*

*Criterion 1.e.1:* Equipment, maps, displays, dosimetry, potassium iodide (KI) and other supplies are sufficient to support emergency operations. (NUREG-0654, H.7,10; J.10.a, b, e, J.11; K.3.a)

Extent of Play

Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations while exercising flexibility in accordance with the level of the incident. Use of maps and displays is encouraged. All instruments should be inspected, inventoried and operationally checked before each use. Instruments should be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV-700 series instruments and other instruments without a manufacturer's recommendation should be calibrated annually. Modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration should be on each instrument, or calibrated frequency can be verified by other means. Additionally, instruments being used to measure activity should have a range of readings sticker affixed to the side of the instrument. The above considerations should be included in 4.a.1 for field team equipment; 4.c.1 for radiological laboratory equipment (does not apply to analytical equipment); reception center and emergency worker facilities' equipment under 6.a.1; and ambulance and medical facilities' equipment under 6.d.1.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of emergency workers who could be deployed from that facility. Appropriate direct-reading dosimetry should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures. Dosimetry should be inspected for electrical leakage at least annually and replaced, if necessary. Because of their documented history of electrical leakage problems, CDV-138s should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the annual letter of certification and/or through a staff assistance visit. Responsible ORO's should demonstrate the capability to maintain

inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway emergency planning zone (EPZ). Quantities of dosimetry and KI available and storage location(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise, provided in the annual letter of certification submission, and/or verified during a staff assistance visit. Available supplies of KI should 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. At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described. All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

Provisions to make dosimetry and Potassium Iodide (KI) available to specialized teams (i.e. Civil Support Team, SWAT, Urban Search and Rescue or Bomb Squads, or other ancillary groups not currently identified within the plans and procedures) should be demonstrated. This should also be a tested element of the federal response. As noted, state and local government provide documentation within the annual review or certification letter to verify the resources/availability and numbers of dosimetry and KI needed for first responders. Likewise, the federal government should be able to show documentation to verify that they also have the instrumentation to support their response and that they will not impose upon state and local government to provide these to federal responders.

## **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 ensure that an exposure control system is in place for emergency workers, including the use of KI and provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, K.4, J.10. e, f)

#### 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 while exercising flexibility in accordance with the level of the incident. Responsible ORO's should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of preauthorized levels and to the number of emergency workers receiving radiation doses above pre-authorized levels. As appropriate, ORO's 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. All activities must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency while exercising flexibility in accordance with the level of the incident, unless noted above or in the extent-of-play agreement.

State and local officials should be allowed the flexibility to make decisions relative to the authorization of the use of KI. While current plans may not call for the distribution of KI for the general public. State officials should be allowed to utilize the KI found within the strategic national stockpile should the need arise. It should be noted that public concern might cause states to consider this option to alleviate public concern.

*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 and Supplement 3)

Extent of Play

During the initial stage of the emergency response, following notification of plant conditions that may warrant off-site 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 the licensee provides release and meteorological data, 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 PAG to which they will be compared. PARs should be transmitted promptly 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. All activities must be based on the ORO's plans and procedures and completed while exercising flexibility in accordance with the level of the incident or as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

*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.f, m)

Extent of Play

OROs 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 sheltering and evacuation. 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. All decision-making activities by ORO personnel must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

State and local governments need enough time to make appropriate decisions based upon the best knowledge of the incident and the plant's prognosis as a result of the attack. Decision-makers need as much information as possible, particularly as it relates to a release of radioactivity. Protective actions normally taken based upon a classification may not be in the best interest of the public, regardless of the planning in place. States and local governments need to be flexible in their considerations of these protective actions and the ancillary actions that may be required to carry out the necessary first response to the incident, as well as follow up actions (i.e., traffic and access control). For instance, it is unrealistic to ask dairy farmers to put their animals in shelters and give them stored feed and water or to discontinue their planting or harvest solely based upon the plan calling for these actions at a General Emergency classification.

*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, J.10.d, e)

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, availability of transportation assets, risk of evacuation versus risk from the avoided dose and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the ORO should consider administering KI. Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts of emergency conditions that may necessitate protective actions for students. Contacts with public school systems/districts must be actual. In accordance with plans and/or procedures, OROs and/or officials of public school systems/districts should demonstrate the capability to make prompt decisions on protective actions for students. Officials should demonstrate that the decision-making process for protective actions considers (that is, 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).” All decision-making activities associated with protective actions, including consideration of available resources, for special population groups must be based on the ORO's plans and procedures while exercising flexibility in accordance with the level of the incident or completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

State and local governments need enough time to make appropriate decisions based upon the best knowledge of the incident and the plant's prognosis as a result of the attack. Decision-makers need as much information as possible, particularly as it relates to a release of radioactivity. Protective actions normally taken based upon a classification may not be in the best interest of the public regardless of the planning in place.

Even though plans may call for these populations to be evacuated at a Site Area Emergency, evacuation may not be in their best interest, especially if there is no anticipated release or radioactivity. To move these populations when it is unnecessary may be more detrimental to their health than sheltering in place until more information is obtained about the incident and the potential for a radioactive release.

*Sub-Element 2.d—Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway*

*Criterion 2.d.1:* Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on ORO planning criteria. (NUREG-0654, J.9, J.11)

Extent of Play

We expect that the OROs 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 OROs 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 (e.g., development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. ORO 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, OROs should consider the use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water then should be compared to the appropriate ingestion PAGs contained in the OROs' 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 also may 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 OROs. OROs should use federal resources, as identified in the National Response Plan (NRP), 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. All activities must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

*Sub-Element 2.e—Radiological Assessment and Decision-Making Concerning Relocation, Re-Entry and Return*

*Criterion 2.e.1:* Timely relocation, reentry and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in ORO plan and/or procedures. (NUREG-0654, I.10; J.9; M.1)

Extent of Play

*Relocation:* OROs 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 versus the PAGs, and field samples of vegetation and soil analyses.

*Re-entry:* 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 enter the evacuated area temporarily 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 timeframes; 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 OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs 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. OROs should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent to which OROs need to develop policies on re-entry 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 the ORO should consider include: conditions that permit the cancellation of the Emergency Classification Level and the relaxation of associated restrictive measures; basing return recommendations (that is, 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.

### **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 and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures while exercising flexibility in accordance with the level of the incident. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.a, b)

#### Extent of Play

ORO should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimeter chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life-saving activities) contained in the OROs' plan and/or procedures. Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the OROs' plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated. During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turnback values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, authorize the worker to incur additional exposures or take other actions. If the

scenario does not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (e.g., written procedures and/or co-workers) 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 and adequate control of exposure can be effected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure-rate areas—for example, at reception centers, counting laboratories, emergency operations centers and communications centers may have individual direct-reading dosimeters, or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member still must have his own permanent-record dosimetry. Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions. All activities must be based on the OROs' plan and/or procedures while exercising flexibility in accordance with the level of the incident or completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

Based upon the incident at the plant, there may not be a release or radioactivity ongoing or expected. For instance, a county plan may call for the issuance of dosimetry to emergency workers when their response may not be necessary. Flexibility in issuing dosimetry is an issue that should be discussed. However, there should be discussions on the issuance of dosimetry and KI to specialized teams (e.g., Civil Support Team, National Guard Rapid Response Teams, SWAT, Urban Search and Rescue, Bomb Squad, etc.). This element of the federal response also should be tested.

*Sub-Element 3.b—Implementation of KI Decision*

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

Extent of Play

OROs should demonstrate the capability to make KI available to emergency workers, institutionalized individuals and, where provided for in the OROs' plan and/or procedures, members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of emergency workers and institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the OROs' plan and/or procedures. For a radiological event, emergency workers should demonstrate the basic knowledge of procedures for the use of KI, whether or not the scenario necessitates the use of KI. This can be accomplished by an interview with the evaluator. However, for a threat event, demonstration of the basic knowledge of KI would be necessary only if the scenario warrants its use and only for emergency workers responding to the site. All activities must be based on the OROs' plans and procedures, while exercising flexibility in accordance with the level of the incident, or completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

In a threat event, members of the general public may elect to use KI provided by the state or purchased independently. State and local officials should provide recommendations and information to their citizens on the use of this drug regardless of whether or not there has been a release containing radioactive iodine 131.

*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, J.10.c, d, g)

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 or transportation-dependent individuals, etc.). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the OROs' 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. All implementing activities associated with protective actions for special populations must be based on the OROs' plan and/or procedures while exercising flexibility in accordance with the level of the incident completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

Discussions should be held between the state and local governments regarding the protective actions for all special facility populations. These actions should be fluid and flexible in reaction to the actual incident occurring at the plant and not necessarily associated with a classification level (i.e., Site Area Emergency).

*Criterion 3.c.2:* OROs/school officials implement protective actions for schools. (NUREG–0654, J.10.c, d, g)

Extent of Play

Public school systems/districts shall demonstrate the ability to implement protective action decisions for students. The demonstration shall be made as follows: 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 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 schoolchildren. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified. Officials of the 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. The provisions of this criterion also apply to any private schools, private kindergartens and daycare centers that participate in radiological exercises pursuant to the ORO's plan and/or procedures as negotiated in the extent-of-play agreement. All activities must be based on the OROs' plan and/or procedures and completed while exercising flexibility in accordance with the level of the incident or as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

Discussions should be held between the state and local governments regarding the protective actions for all special facility populations. These actions should be fluid and flexible in reaction to the actual incident occurring at the plant and not necessarily associated with a classification level (i.e., Site Area Emergency).

*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)

Extent of Play

OROs should demonstrate the capability to select, establish and staff appropriate traffic and access control points, consistent with protective action decisions (e.g., evacuating, sheltering and relocation), as well as for controlling access to the site, 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 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. All activities must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

*Criterion 3.d.2:* Impediments to evacuation are identified and resolved. (NUREG–0654, J.10.k)

Extent of Play

OROs should 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, should be logged. All activities must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

*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 EPZ for implementation of protective actions. (NUREG–0654, J.9, 11)

Extent of Play

Applicable OROs should demonstrate the capability to secure and use 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. OROs should use federal resources as identified in the NRP, 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. All activities must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

*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. (NUREG-0654, J.9, 11)

Extent of Play

Development of measures and strategies for implementation of ingestion pathway zone (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 distribution of appropriate pre-printed and/or camera-ready information and instructions to pre-determined individuals and businesses. OROs 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. All activities must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

*Sub-Element 3.f—Implementation of Relocation, Re-Entry and Return Decisions*

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

Extent of Play

*Relocation:* OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals that have not been evacuated to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs also should 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 OROs 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. OROs also should demonstrate the capability to communicate instructions to the public regarding relocation decisions.

*Re-entry:* OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily re-enter the restricted area, to protect them from unnecessary radiation exposure, and to monitor the 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 nondirect-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 (5) 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:* OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs 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 OROs for relocation, re-entry and return may be simulated; however, all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting. OROs should use federal resources as identified in the NRP, 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. All activities must be based on the OROs' plan and/or procedures and completed as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

#### **Evaluation Area 4—Field Measurement and Analysis**

##### *Sub-Element 4.a—Plume Phase Field Measurements and Analyses*

*Criterion 4.a.1:* The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10; I.7, 8, 9)

##### Extent of Play

Field teams should be equipped with all instrumentation and supplies necessary to accomplish their mission. This should include instruments capable of measuring gamma exposure rates and detecting the presence of beta radiation. These instruments should be capable of measuring a range of activity and exposure, including radiological protection/exposure control of team members and detection of activity on the air sample collection media, consistent with the intended use of the instrument and the OROs' plan and/or procedures. An appropriate radioactive check source should be used to verify proper operational response for each low-range radiation measurement instrument (less than 1 R/hr) and for high-range instruments when available. If a source is not available for a high-range instrument, a procedure should exist to operationally test the instrument before entering an area where only a high-range instrument can make useful readings. All activities must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

*Criterion 4.a.2:* Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, H.12; I.8, 11; J.10.a)

##### 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 licensee 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 licensee teams do not obtain peak measurements in the plume, it is the OROs' 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. OROs should use federal resources as identified in the NRP and other resources (e.g., compacts, utility, etc.), if available. Evaluation of this criterion will take into

consideration the level of federal and other resources. All activities must be based on the OROs' plan and/or procedures and completed while exercising flexibility in accordance with the level of the incident or as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

In response to an unstable situation at the plant involving attacking armed forces, the decision to deploy field teams is the responsibility of, and will be predicated on discussions with, the utility and federal and state officials.

*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. 9)

#### Extent of Play

Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates and ambient radiation to the field team coordinator, dose assessor or other appropriate authority. If samples have radioactivity significantly above background levels, 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. 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 OROs' plan and/or procedures. OROs should use federal resources as identified in the NRP and other resources (e.g., compacts, utility, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of federal and other resources participating in the exercise. All activities must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

#### *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)

#### Extent of Play

The OROs' 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 OROs' 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. OROs should use federal resources as identified in the NRP and other resources (e.g., compacts, utility, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of federal and other resources. All activities must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

#### *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; J.11)

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 OROs' plan and/or procedures. The laboratory (laboratories) 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 threat based event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO. The laboratory staff should be qualified in radioanalytical techniques and contamination control procedures. OROs should use federal resources as identified in the NRP and other resources (e.g., compacts, utility, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of federal and other resources. All activities must be based on the OROs' plan and/or procedures while exercising flexibility in accordance with the level of the incident or completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

**Evaluation Area 5—Emergency Notification and 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 off-site emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include the elements required by current FEMA REP guidance. (10 CFR part 50, appendix E.IV.D and NUREG-0654, E.5, 6, 7)

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 OROs' plan and/or procedures while exercising flexibility in accordance with the level of the incident, completion of system activation should be accomplished in a timely manner (not subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance. OROs whose primary method of alerting and notifying the public is route alerting should demonstrate the capability to accomplish the primary route alerting, following the decision to activate the alert and notification system, in a timely manner (not be subject to specific time requirements) in accordance with the OROs' plan and/or procedures. At least one route needs to be demonstrated and evaluated. The selected route(s) 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 (that is, the message that actually would 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 an agreed upon location. The initial message should include the elements required by current FEMA REP guidance. For exercise purposes, "timely" is defined as "with a sense of urgency and without undue delay." If message dissemination is 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 conducted as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test message(s) 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. All activities for this criterion must be based on the OROs' plan and/or procedures and completed as they would be in an actual emergency, except as noted above or in the extent-of-play agreement.

Flexibility for this criteria will be essential, as this is the precursor warning to the public. If there is no potential for a radiological release and insufficient information regarding the incident to provide to the public, officials may elect to not sound the sirens in accordance with the emergency classification.

*Criterion 5.a.2:* [Reserved]

*Criterion 5.a.3:* Activities associated with FEMA-approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized off-site 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)

#### Extent of Play

ORO in FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) within five to 10 miles of 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 off-site 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 details on where to obtain additional information. For exception-area alerting, at least one route needs to be demonstrated and evaluated. The selected route(s) 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 (that is, the message that would 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 an agreed-upon location. Backup alert and notification of the public should be completed within 45 minutes following the detection by the OROs of a failure of the primary alert and notification system. Backup route alerting only needs to be demonstrated and evaluated, in accordance with the OROs' 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 (that is, the message that would 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 an agreed-upon location. All activities for this criterion must be based on the OROs' plan and/or procedures and completed as they would be in an actual emergency, except as noted above or in the extent-of-play agreement.

#### *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.c)

Extent of Play

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (not subject to specific time requirements). For exercise purposes, “timely” is defined as “with a sense of urgency and without undue delay.” If message dissemination is 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 ORO 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. The OROs also should be prepared to disclose and explain the emergency classification level of the incident. At a minimum, this information must be included in media briefings and/or news statements. 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 include 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. 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 OROs’ 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 timely and pertinent media briefings and news statements 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 news statements 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 news statements) and media information kits should be available for dissemination to the media. OROs should demonstrate that an effective system is in place for responding to 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 news statements. All activities for this criterion must be based on the OROs’ plans and procedures and completed as they would be in an actual emergency while exercising flexibility in accordance with the level of the incident, unless noted above or otherwise indicated in the extent-of-play agreement.

Effective communications to the general public may be constrictive based upon the information that can be disseminated without prior approval of the FBI. Timeliness of providing complete and accurate information to the public and the media will be slowed by this technicality. The information provided during briefings and in press statements via this “flow of information” process most likely will be very limited and will not adhere to the requirements of needed information. Flexibility with regard to the briefings as well as concerns about the content of press statements should be reviewed in more detail. Establishing preliminary statements that can be utilized in order to address press needs—while not identifying specifics regarding the response and/or the crime scene investigation—could be developed and pre-approved.

## Evaluation Area 6—Support Operation/Facilities

### *Sub-Element 6.a—Monitoring and Decontamination of Evacuees and Emergency Workers and Registration of Evacuees*

*Criterion 6.a.1:* The reception center/emergency worker facility has appropriate space, adequate resources and trained personnel to provide monitoring, decontamination and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h; J.12; K.5.a)

#### Extent of Play

Radiological monitoring, decontamination and registration facilities for evacuees/emergency workers should be set up and demonstrated as they would be in an actual emergency or as indicated in the extent-of-play agreement. This would include adequate space for evacuees' vehicles. Expected demonstration should include one-third of the monitoring teams/portal monitors required to monitor 20 percent of the population allocated to the facility within 12 hours. Before using monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate-per-hour needed to monitor 20 percent of the EPZ population planning base within about 12 hours. This monitoring productivity rate-per-hour is the number of evacuees who can be monitored per hour by the total complement of monitors using an appropriate monitoring procedure. A minimum of six individuals per monitoring station should be monitored, using equipment and procedures specified in the plan and/or procedures, to allow demonstration of monitoring, decontamination and registration capabilities. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators in order to determine whether the 12-hour requirement can be met. Monitoring of emergency workers does not have to meet the 12-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers. Decontamination of evacuees/emergency workers may be simulated and conducted by interview. For a threat event, demonstration of monitoring and decontamination would be necessary only if the scenario warrants such action, and only for emergency workers responding to the site. The availability of provisions for separately showering should be demonstrated or explained. The staff should 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 clean from potentially contaminated areas. Provisions also should exist to separate contaminated and uncontaminated individuals, provide changes of clothing for contaminated individuals, and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any contaminated individual, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings. Monitoring personnel should explain the use of action levels for determining the need for decontamination. They also should explain the procedures for referring evacuees who cannot be decontaminated adequately for assessment and follow-up in accordance with the OROs' plan and/or procedures. Contamination of the individual will be determined by controller inject and not simulated with any low-level radiation source. The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated, including a registration record for each individual, consisting of the individual's name, address, results of monitoring and time of decontamination, if any, or as otherwise designated in the plan. Audio recorders, camcorders or written records all are acceptable means for registration. All activities associated with this criterion must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless otherwise indicated in the extent-of-play agreement.

*Sub-Element 6.b—Monitoring and Decontamination of Emergency Worker Equipment*

*Criterion 6.b.1:* The facility/OROs has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment, including vehicles. (NUREG-0654, K.5.b)

Extent of Play

The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the OROs' plan and/or procedures. For a threat event, demonstration of monitoring and decontamination would be necessary only if the scenario warrants and only for equipment and vehicles for emergency workers responding to the site. Specific attention should be paid to equipment, including vehicles, with which contaminated individuals came in contact. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment, including vehicles, based on guidance levels and procedures stated in the plan and/or procedures. The area to be used for monitoring and decontamination should be set up as it would be in an actual emergency, with all route markings, instrumentation, recordkeeping and contamination control measures in place. Monitoring procedures should be demonstrated for a minimum of one vehicle. It generally is 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 should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated also should be checked. Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, may be simulated and conducted by interview. All activities associated with this criterion must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

*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 ensure that evacuees have been monitored for contamination and have been decontaminated as appropriate before entering congregate care facilities. (NUREG-0654, J.10.h, J.12)

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 objective, exercise demonstration expectations should be specified clearly in extent-of-play agreements. Congregate care staff also should 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 and large-scale food supplies) need not be physically available at the facility (facilities). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities. All activities associated with this criterion must be based on the OROs' plans and procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

*Sub-Element 6.d—Transportation and Treatment of Contaminated Injured Individuals*

*Criterion 6.d.1:* The facility/OROs have adequate space, resources and trained personnel to provide transport, monitoring, decontamination and medical services to contaminated and/or injured individuals. (NUREG-0654, F.2; H.10; K.5.a, b; L.1, 4)

Extent of Play

Monitoring, decontamination and contamination control efforts will not delay urgent medical care for the victim. OROs should demonstrate the capability to transport contaminated injured individuals via ambulance to medical facilities. However, to avoid taking an ambulance out of service for an extended time, any vehicle may be used to transport the victim to the medical facility. Normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur before releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information. Monitoring of the victim may be performed before transport or en route or deferred to the medical facility. Before using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking them for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated before and during transport and at the receiving medical facility. The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals. The medical facility should demonstrate the capability to make decontamination decisions, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator. All activities associated with this criterion must be based on the OROs' plan and/or procedures and completed, as they would be in an actual emergency, unless noted above or in the extent-of-play agreement.

---

## **APPENDIX C: Pilot Drill Lessons Learned**

### **3.1 Drill Development Issues**

- Strict adherence to the timeline is necessary during these drills to avoid unrealistic responses by individuals who will not be at a certain place until a certain time in the event scenario.
- Critical communications between the site ERO and the off-site incident command post is necessary to be played out in real time with the communication equipment that will be used in an actual event.
- Consider conducting a tabletop drill with off-site response organizations and local law enforcement to establish a timeline for the time jump between Part 1 and Part 2 to aid in the understanding of the drill concept.
- Management (on-site and off-site) commitment and adequate available resources are necessary prior to attempting to conduct a scenario of this complexity.
- Pre-staging of off-site responders and equipment (fire department, ambulance, etc) should be done to account for actual day-to-day security restriction requirements. Realistic response times (i.e., security search delay/artificiality required for a drill) are critical to maintain exercise continuity.
- Combined player/controller pre-drill briefings need to clearly set the scope and expectations for this type of drill.
- Federal practices for control of air space, both in and around the site, as well as throughout the state and county must be known to ensure adequacy of response procedures if air space is restricted.
- The extent of participation is determined based on the objectives selected. Objectives should be selected consistent with the off-site participation volunteered.
- A tabletop drill in a common meeting room or auditorium should be considered with key personnel from all participating agencies prior to running a real-time integrated facility scenario.
- Participation should include appropriately security-cleared personnel to enable the flow of sensitive information between the agencies.

### **3.2 Security Issues**

- Movement of on-site personnel who are under site restrictions and require a considerable amount of ERO coordination must be considered to ensure personnel are protected and can accomplish their emergency functions.
- The Emergency Director should be involved in the decisions on security related actions. This will ensure security and LLEA activities integrate with the ERO so that there is one cohesive response to the emergency (vice several independent responses).

- Personnel remaining on-site following the establishment of site ingress and egress by law enforcement officials may be detained for screening and interview purposes prior to release.

### **3.3 ERO Member Logistics Issues**

- Response procedures need to support the correct emergency notification form to be used in all emergency notifications to off-site agencies (county, state, the NRC).
- Enhanced coordination of activities within the power block, between the TSC, OSC, LLEA, and the Incident Command Post (ICP) may be appropriate. Periodic reviews comparing on-site ERFs, LLEA and ICP procedures should be adopted.
- The impact of a large number of employee vehicles in the parking lots (which will be used for triage, staging, and alternate locations for air and ground transport) should be considered.
- Specialized Personal Protective Equipment (PPE) may be needed for high-temperature fire conditions (approach suits, proximity suits, thermal imaging equipment, etc.).
- Requests for off-site assistance should be coordinated through a central location to help eliminate the numerous calls and requests being made of off-site agencies.
- Security radio traffic may need to be provided in the control room simulator crew to mimic information that normally would be available to operations personnel.
- Methods to relocate the ERO to the emergency facilities following a threat event should be available to ensure movement of personnel once a lockdown is declared.
- Site public address messages must be understandable to both utility and non-utility personnel who may be on site.
- Existing processes and ERO understanding need to be consistent with actual expectations for augmented response of agencies such as the National Guard.
- Communications between security and the emergency director must be sufficient to manage an event with security implications.

### **3.4 NRC Communications Issues**

- NRC communications demands are more significant than expected and through unanticipated pathways in threat scenarios.
- Emergency Response Data System (paper or simulator driven) may be of benefit to the scenario by simulating data availability to NRC and other off-site responders.

- The expectation for information that should be communicated via a secure line should be defined and understood by the ERO.
- The NRC incident response center may request a dedicated communicator from the site security staff.

### **3.5 Public Information Issues**

- Adequate protocols should be in place to coordinate news statements, such as through the FBI and the Attorney General.
- A threat-based event and potential crime scene restrictions can impact the public information process.
- Unanticipated requests for information from federal and other offsite agencies need to be expected and managed.
- Initial information processes (news statements or, potentially, press conferences) may be impacted if personnel normally supporting these functions cannot respond because of a plant lockdown.
- The volume of media responding to a threat-based event at multiple locations needs to be considered in existing media communications plans.
- Media processes for dealing with information related to death and serious injury of responding personnel should be incorporated into plans and procedures.
- Expedited processes for obtaining information in the Joint Information Center may be needed to rapidly pursue information for news statements and briefings, plant status, casualties and status of patients.

**APPENDIX D: Acronyms and Glossary****List of Acronyms and Abbreviations**

DHS.....	Department of Homeland Security
EAL .....	Emergency Action Level
ECL .....	Emergency Classification Level
EMAC.....	Emergency Management Assistance Compact
EOC .....	Emergency Operations Center
EOP.....	Emergency Operations Plan
EP .....	Emergency Preparedness
EPA.....	Environmental Protection Agency
EPZ.....	Emergency Planning Zone
ERF .....	Emergency Response Facility
ERO .....	Emergency Response Organization
FBI.....	Federal Bureau of Investigation
FCO.....	Federal Coordinating Officer
FEMA .....	Federal Emergency Management Agency
FOSC .....	Federal On-Scene Coordinator
IC.....	Incident Commander
ICM.....	Interim Compensatory Measure
ICP .....	Incident Command Post
ICS .....	Incident Command System
IMT .....	Incident Management Team
INS .....	Incident of National Significance
IPZ.....	Ingestion Pathway Zone
JFO .....	Joint Field Office
JIC.....	Joint Information Center

---

JOC.....	Joint Operation Center
KI.....	Potassium Iodide
LLEA .....	Local Law Enforcement Agency
MACC.....	Multi-Agency Command Center
NEI .....	Nuclear Energy Institute
NIMS .....	National Incident Management System
NIRT .....	Nuclear Incident Response Team
NRC .....	Nuclear Regulatory Commission
NRP.....	National Response Plan
NRT.....	National Response Team
NSSE .....	National Special Security Event
ORO .....	Offsite Response Organization
PAD.....	Protective Action Decision
PAR.....	Protective Action Recommendation
PFO.....	Principal Federal Officer
PIO .....	Public Information Officer
RERT .....	Radiological Emergency Response Team
RRT.....	Regional Response Team
SFO.....	Senior Federal Officer
SAMG.....	Severe Accident Management Guideline
SWAT.....	Special Weapons and Tactics

## Applicable National Response Plan Glossary

<b>Area Command</b>	An organization established (1) to oversee the management of multiple incidents by an Incident Command System organization or (2) to oversee the management of large or multiple incidents to which several Incident Management Teams have been assigned. Area Command is responsible for setting overall strategy and priorities, allocating critical resources according to priorities, ensuring that incidents are properly managed and ensuring that objectives are met and strategies followed. Area Command becomes Unified Area Command when incidents are multi-jurisdictional. Area Command may be established at an EOC facility or at some location other than an ICP.
<b>Casualty</b>	Any person who is declared dead or is missing, ill or injured.
<b>Catastrophic Incident</b>	Any natural or manmade incident, including terrorism, that results in extraordinary levels of mass casualties, damage or disruption severely affecting the population, infrastructure, environment, economy, national morale and/or government functions. A catastrophic event could result in sustained national impacts over a prolonged period of time; almost immediately exceeds resources normally available to state, local, tribal and private-sector authorities in the impacted area; and significantly interrupts governmental operations and emergency services to such an extent that national security could be threatened. All catastrophic events are Incidents of National Significance.
<b>Command Staff</b>	In an incident management organization, the Command Staff consists of the Incident Command and the special staff positions of Public Information Officer, Safety Officer, Liaison Officer and other positions as required, who report directly to the Incident Commander. They may have an assistant or assistants, as needed.
<b>Credible Threat</b>	A potential terrorist threat that, based on a threat assessment, is credible and likely to involve weapons of mass destruction.
<b>Emergency</b>	As defined by the Stafford Act, an emergency is “any occasion or instance for which, in the determination of the president, federal assistance is needed to supplement state and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States.”
<b>Emergency Operations Center</b>	The physical location at which the coordination of information and resources to support domestic incident management activities normally takes place. An EOC may be a temporary facility or a more central or permanently established facility, perhaps at a higher level of organization within a jurisdiction. EOCs may be organized by major functional disciplines (e.g., fire, law enforcement medical services), by jurisdiction (e.g., federal, state, regional, county, city, tribal) or by some combination thereof.
<b>Emergency Operations Plan</b>	The “steady-state” plan maintained by various jurisdictional levels for managing a wide variety of potential hazards.
<b>Emergency Public Information</b>	Information that is disseminated primarily in anticipation of an emergency or during an emergency. In addition to providing situational information to the public, it also frequently provides directive actions required of the general public.
<b>Off-Site Response Organization</b>	Includes federal, state, local and tribal public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities) and related personnel, agencies and authorities. Also known as “Emergency Responder” or “Emergency Response Provider” in the National Response Plan.
<b>Evacuation</b>	Organized, phased and supervised withdrawal, dispersal or removal of civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas.

<b>Federal Coordinating Officer</b>	The federal officer who is appointed to manage federal resource support activities related to Stafford Act disasters and emergencies. The FCO is responsible for coordinating the timely delivery of federal disaster assistance resources and programs to the affected state and local governments, individual victims, and the private sector.
<b>Federal On-Scene Coordinator</b>	The federal official pre-designated by the Environmental Protection Agency or the Coast Guard to coordinate responses under subpart D of the NCP, or the government official designated to coordinate and direct removal actions under subpart E of the NCP.
<b>First Responder</b>	Local and nongovernmental police, fire and emergency personnel who, in the early stages of an incident, are responsible for the protection and preservation of life, property, evidence and the environment, including emergency response providers as defined in section 2 of the Homeland Security Act of 2002 (6 U.S.C. 101), as well as emergency management, public health, clinical care, public works and other skilled support personnel (e.g., equipment operators) who provide immediate support services during prevention, response and recovery operations. First responders may include personnel from federal, state, local, tribal or nongovernmental organizations.
<b>Incident</b>	An occurrence or event, natural or human-caused, that requires an emergency response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks or threats, wildland and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, war-related disasters, and public health and medical emergencies.
<b>Incident Action Plan</b>	An oral or written plan containing general objectives reflecting the overall strategy for managing an incident. It may include the identification of operational resources and assignments. It also may include attachments that provide direction and important information for management of the incident during one or more operational periods.
<b>Incident Command Post</b>	The field location at which the primary tactical-level, on-scene incident command functions are performed. The ICP may be collocated with the incident base or other incident facilities.
<b>Incident Command System</b>	A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The ICS is the combination of facilities, equipment, personnel, procedures and communications operating with a common organizational structure, designed to aid in the management of resources during incidents. The ICS is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. The ICS is used by various jurisdictions and functional agencies, both public and private, or organized field-level incident management operations.
<b>Incident Commander</b>	The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.
<b>Incident Management Team</b>	The incident commander and appropriate command and general staff personnel assigned to an incident.
<b>Incident of National Significance</b>	An actual or potential high-impact event that requires a coordinated and effective response by and appropriate combination of federal, state, local, tribal, nongovernmental and/or private-sector entities in order to save lives and minimize damage, and provide the basis for long-term community recovery and mitigation activities.
<b>Initial Actions</b>	The actions taken by those responders first to arrive at an incident site.

<b>Initial Response</b>	Resources initially committed to an incident.
<b>Joint Field Office</b>	A temporary federal facility established locally to provide a central point for federal, state, local and tribal executives with responsibility for incident oversight, direction and/or assistance to effectively coordinate protection, prevention, preparedness, response and recovery actions. The JFO will combine the traditional functions of the JOC, the FEMA DFO, and the JIC within a single federal facility.
<b>Joint Information Center</b>	A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating agencies should collocate at the JIC.
<b>Joint Operations Center</b>	The JOC is the focal point for all federal investigative law enforcement activities during a terrorist or potential terrorist incident or any other significant criminal incident, and is managed by the Senior Federal Law Enforcement Officer. The JOC becomes a component of the JFO when the NRP is activated.
<b>Mobilization Center</b>	An off-site temporary facility at which response personnel and equipment are received from the point of arrival and are pre-positioned for deployment to an incident logistics base, to a local staging area, or directly to an incident site, as required. A mobilization center also provides temporary support services, such as food and billeting, for response personnel prior to their assignment, release or reassignment and serves as a place to out-process following demobilization while awaiting transportation.
<b>Multi-agency Command Center</b>	An interagency coordination center established by DHS/Secret Service during National Special Security Events (NSSE) as a component of the JFO. The MACC serves as the focal point for interagency security planning and coordination, including the coordination of all NSSE-related information from other intra-agency centers (e.g., police command posts, Secret Service security rooms) and other interagency centers (e.g., intelligence operations centers, joint information centers).
<b>Multi-jurisdictional Incident</b>	An incident requiring action from multiple agencies that each have jurisdiction to manage certain aspects of an incident. In ICS, these incidents will be managed under Unified Command.
<b>National Incident Management System</b>	A mandated system that provides a consistent, nationwide approach for federal, state, local and tribal governments; the private sector; and NGOs to work effectively and efficiently together to prepare for, respond to and recover from domestic incidents, regardless of cause, size or complexity. To provide for interoperability and compatibility among federal, state, local and tribal capabilities, the NIMS includes a core set of concepts, principles and terminology. HSPD-5 identifies these as the ICS; multi-agency coordination systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and the collection, tracking and reporting of incident information and incident resources.
<b>National Response Center</b>	A national communications center for activities related to oil and hazardous substance response actions. The National Response Center, located at DHS/Coast Guard headquarters in Washington, D.C., receives and relays notices of oil and hazardous substances releases to the appropriate federal OSC.
<b>National Response Team</b>	The NRT, composed of the 16 federal agencies with major environmental and public health responsibilities, is the primary vehicle for coordinating federal agency activities under the NCP. The NRT carries out national planning and response coordination and is the head of a highly organized federal oil and hazardous substance emergency response network. The EPA serves as the NRT chair, and DHS/Coast Guard serves as the vice chair.

<b>National Special Security Event</b>	A designated event that, by virtue of its political, economic, social or religious significance, may be the target of terrorism or other criminal activity.
<b>Nuclear Incident Response Team</b>	Created by the Homeland Security Act to provide DHS with a nuclear/radiological response capability. When activated, the NIRT consists of specialized federal response teams drawn from DOE and/or the EPA. These teams may become DHS operational assets providing technical expertise and equipment when activated during a crisis or in response to a nuclear/radiological incident as part of the DHS federal response.
<b>Principal Federal Official</b>	The federal official designated by the secretary of homeland security to act as his/her representative locally to oversee, coordinate and execute the secretary's incident management responsibilities under HSPD-5 for Incidents of National Significance.
<b>Public Information Officer</b>	A member of the Command Staff responsible for interfacing with the public and media or with other agencies with incident-related information requirements.
<b>Radiological Emergency Response Teams</b>	Teams provided by the EPA's Office of Radiation and Indoor Air to support and respond to incidents or sites containing radiological hazards. These teams provide expertise in radiation monitoring, radionuclide analyses, radiation health physics and risk assessment. RERTs can provide both mobile and fixed laboratory support during a response.
<b>Recovery</b>	The development, coordination and execution of service- and site-restoration plans for impacted communities and the reconstitution of government operations and services through individual, private-sector, nongovernmental and public assistance programs that: identify needs and define resources; provide housing and promote restoration; address long-term care and treatment of affected National Response Plan persons; implement additional measures for community restoration; incorporate mitigation measures and techniques, as feasible; evaluate the incident to identify lessons learned; and develop initiatives to mitigate the effects of future incidents.
<b>Regional Response Teams</b>	Regional counterparts to the National Response Team, the RRTs comprise regional representatives of the federal agencies on the NRT and representatives of each state within the region. The RRTs serve as planning and preparedness bodies before a response, and provide coordination and advice to the federal OSC during response actions.
<b>Senior Federal Official</b>	An individual representing a federal department or agency with primary statutory responsibility for incident management. SFOs utilize existing authorities, expertise and capabilities to aid in management of the incident working in coordination with other members of the JFO Coordination Group.
<b>Situation Assessment</b>	The evaluation and interpretation of information gathered from a variety of sources (including weather information and forecasts, computerized models, GIS data mapping, remote sensing sources, ground surveys, etc.) that, when communicated to emergency managers and decision-makers, can provide a basis for incident management decision-making.
<b>Threat</b>	An indication of possible violence, harm or danger.
<b>Unified Command</b>	An application of ICS used when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the Unified Command to establish their designated Incident Commanders at a single ICP and to establish a common set of objectives and strategies and a single Incident Action Plan.