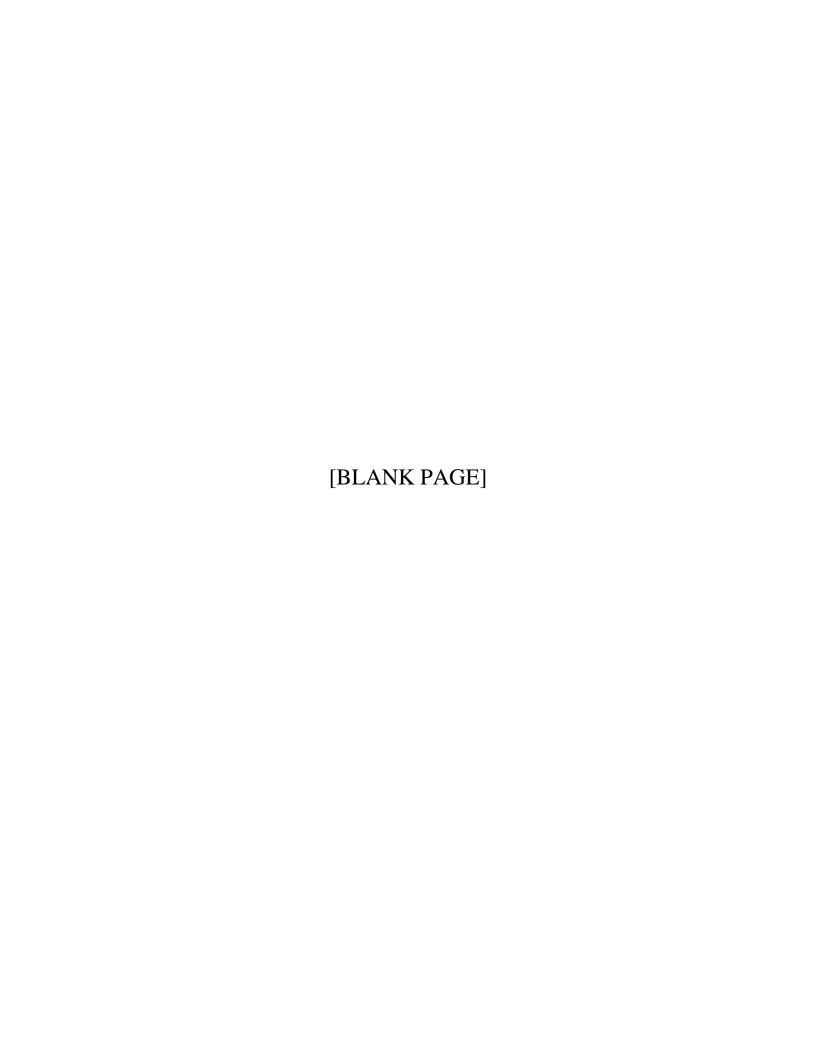
Conducting a Hostile Action-Based Emergency Response Drill

September 2016

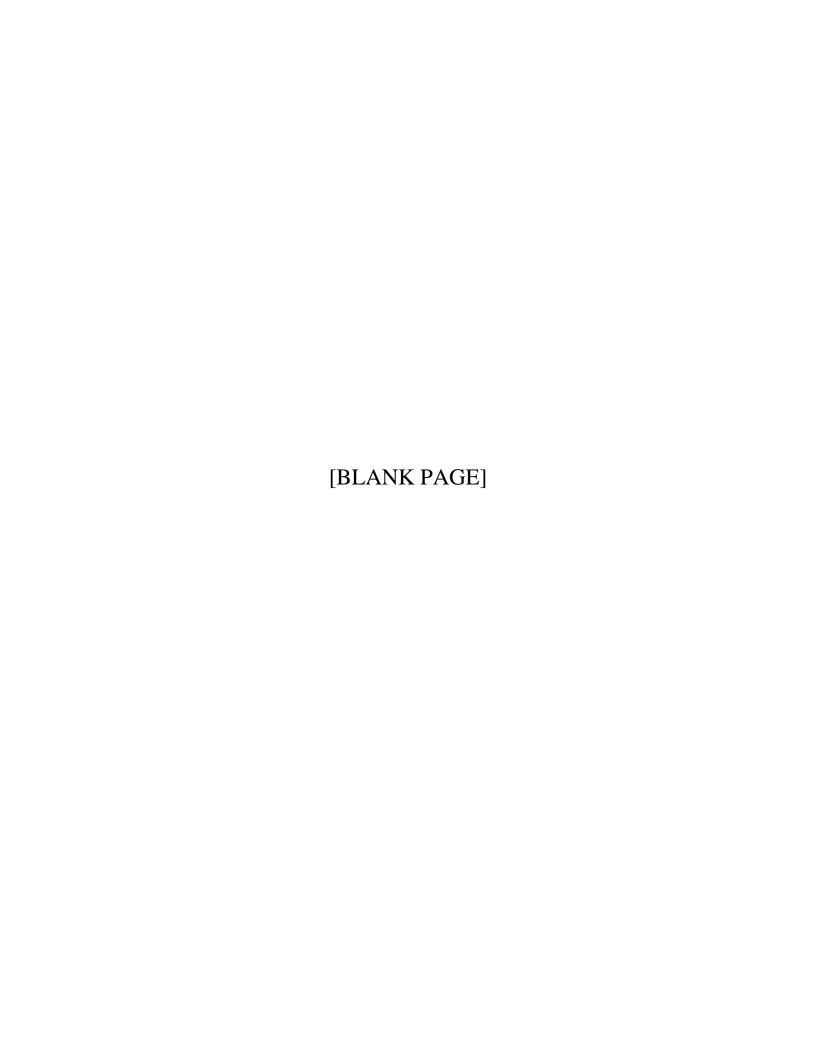


NEI 06-04 [Revision 3]

Nuclear Energy Institute

Conducting a Hostile Action-Based Emergency Response Drill

September 2016



ACKNOWLEDGMENTS

This document was prepared by the Nuclear Energy Institute (NEI) Hostile Action-Based (HAB) Drill Task Force.

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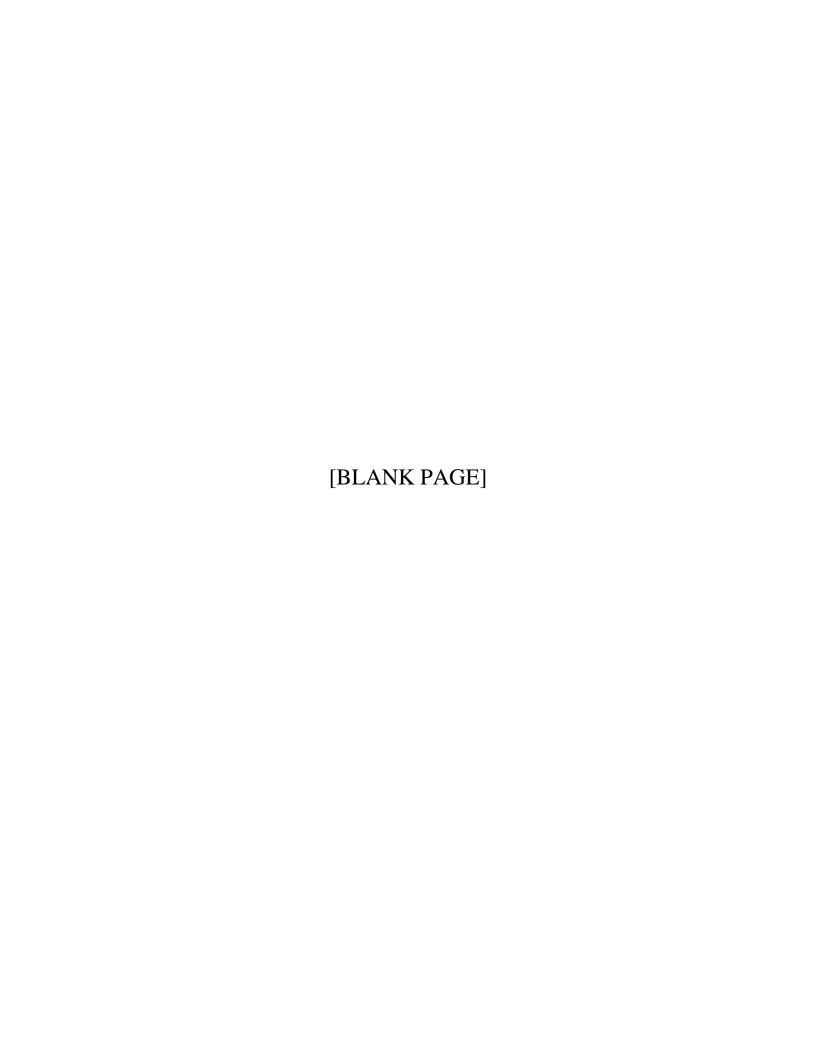


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CONDUCTING A HOSTILE ACTION-BASED EMERGENCY RESPONSE DRILL

1 OVERVIEW

This document provides guidance on the development, conduct and evaluation of Hostile Action-Based (HAB) emergency response drills and exercises. A HAB drill provides an opportunity to practice the integrated response to a Hostile Action directed against a commercial nuclear power plant. HAB exercises are conducted periodically in accordance with the requirements of 10 CFR 50.47(b) and 10 CFR Part 50, Appendix E, Section IV.F.2.

While a HAB drill has many elements in common with a non-HAB drill, there are important differences. To help understand these differences, the key attributes of a HAB drill are listed below.

- The drill scenario will postulate an attack by an adversary force that successfully inflicts significant plant damage and casualties to the site staff.
- Tactical responses by security and law enforcement officers are not performed or simulated in the field; however, the outcome of such tactical responses are described in the scenario timeline (e.g., the timeline specifies when the adversaries are neutralized).
- Security personnel will need to simulate security facilities and functions (e.g., the Central Alarm Station), and on-shift security supervision.
- The postulated scenario events will lead to activation and operation of an onsite or nearsite Incident Command Post (ICP), and, depending upon State and local protocols, other facilities defined by the National Incident Management System (NIMS).
- Personnel from the on-shift Emergency Response Organization (ERO),² local law enforcement agencies (LLEA)³ and first-responder agencies will demonstrate the ability to coordinate initial response actions including implementation of coping/mitigation actions, firefighting and emergency medical services in a post-attack environment.
- There will be a demonstration of the coordination and decision-making necessary to mobilize the ERO in a post-attack environment. Depending upon the scenario, this may include use of alternative facilities and staging areas.

In order to present opportunities for demonstration of certain HAB drill objectives, it will be necessary for the scenario to employ an adversary force in excess of that defined by the

¹ For readability purposes, the term "drill" is used throughout this document. The usual distinctions between a drill and an exercise notwithstanding, the guidance in this document applies to both HAB drills and exercises.

² The term "ERO" refers to the licensee's emergency response personnel.

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³ As used in this document, the term LLEA applies to all law enforcement organizations participating in a drill or exercise, and may include officials from regional, State and Federal organizations.

Design Basis Threat (DBT). In addition, drill exigencies will require that certain events, consequences or response actions be embellished or presented in a time-compressed fashion. Drill participants should be made aware of these stipulations, and of the expectation to assess, and respond to, the events as presented.

The damage assumed to occur in a HAB drill scenario is not a reflection of the actual protection provided by site security plans, personnel and equipment. Further, performance in these drills is not considered to be a demonstration of physical security plan capabilities or implementation. It is expected that the security functions or support necessary to implement the emergency plan will be demonstrated.

It is recognized that the State and local jurisdictions surrounding nuclear power plant sites have varying protocols concerning implementation of the NIMS. With respect to participation by NIMS-related facilities, this document refers to the ICP since, at a minimum, it is expected that an ICP will be established to direct a response to an attack on a nuclear power plant. For the purpose of implementing the guidance provided by this document, "ICP" should be taken to mean not only the ICP, but also any additional NIMS-related facilities that State or local officials would activate to support an attack-related response for a given site (e.g., a separate Area Command or Unified Command facility). In other words, the recommended actions directed towards the ICP should also be considered for applicability to the other NIMS-related facilities participating in the drill.

The U.S. Nuclear Regulatory Commission (NRC) has issued specific requirements and guidance concerning the expected scheduling and execution of HAB exercises. Drill managers should review this information when planning activities for an upcoming exercise cycle. In particular, the following documents should be closely reviewed.

- 10 CFR 50, Appendix E, Section IV.F.2
- NSIR/DPR-ISG-01, Interim Staff Guidance, Emergency Planning for Nuclear Power Plants
- NRC Inspection Procedure 71114.07, Exercise Evaluation Hostile Action (HA) Event
- NRC Inspection Procedure 71114.08, Exercise Evaluation Scenario Review

Drill managers should review the operating experience and lessons learned information available from NEI, NRC and Federal Emergency Management Agency (FEMA) sources prior to conducting a HAB drill. NEI provides operating experience from HAB drills on its member website (http://www.nei.org/Member-Center/Member-Center-Home). Additional operating experience information can be found on the NRC's emergency preparedness website (http://www.nrc.gov/about-nrc/emerg-preparedness.html) and FEMA's Lessons Learned Information Sharing website (https://www.llis.gov).

2 HAB DRILL OBJECTIVES

To meet regulatory requirements and related guidance, a licensee must maintain a set of drill and exercise objectives which guides the periodic demonstration of response functions described in the site emergency plan. Since an exercise utilizing a HAB scenario must be conducted during an 8-year exercise cycle, this set of objectives will need to be expanded to include a subset focused on demonstrating those functions uniquely performed in response to a hostile action. Appendix A, HAB Drill and Exercise Objectives, presents generic guidance that a licensee should use to develop a site-specific set of HAB drill and exercise objectives.⁴

Each objective has an associated listing of Performance Attributes; these attributes define successful objective performance and should be used to develop the evaluation criteria for each objective. The development of objectives and evaluation criteria must be informed by site-specific emergency plan and implementing procedure requirements, and the content of existing drill and exercise objectives. A licensee is not expected to use the generic objectives verbatim; however, the function(s) described by each objective, and the associated performance attributes, must be addressed in the objectives and evaluation material used by the licensee to conduct an exercise.

Additional expectations concerning demonstration of HAB drill and exercise objectives are contained in guidance documents issued by the NRC; in particular, refer to NSIR/DPR-ISG-01, *Interim Staff Guidance, Emergency Planning for Nuclear Power Plants* and NRC Inspection Procedure 71114.07, *Exercise Evaluation - Hostile Action (HA) Event*.

As with any other emergency response drill, each HAB drill shall be critiqued to identify weaknesses and opportunities for improvement. Identified weaknesses shall be entered into the appropriate site corrective action process. Licensees should modify their critique processes as necessary to ensure a thorough review and evaluation of HAB-related drill objectives.

Objectives for Offsite Response Organizations (OROs)⁵ are developed and evaluated in accordance with guidance provided by FEMA.

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⁴ The generic HAB drill and exercise objectives presented in Attachment A of NEI 06-04, Revision 2, were endorsed for licensee use by the NRC staff; refer to NRC ADAMS ML112570092 and ML112570074. The objectives presented in Attachment A of this document, Revision 3, are unchanged from those in Revision 2.

⁵ This document uses the term "ORO" to refer to personnel from State and local emergency response agencies.

3 HAB DRILL PREPARATION

This section highlights drill preparation tasks and support needs unique to a HAB drill. Each item should be reviewed, and identified actions incorporated into the appropriate site drill preparation process and schedule.

3.1 GENERAL

Conducting a HAB drill requires a set of site and ORO resources that differ from those necessary to conduct non-HAB drills. The drill manager should identify the site resources necessary to conduct the HAB drill and ensure that they are scheduled/reserved. Consider items such as security personnel and equipment, site or Protected Area escorts, firefighting or medical response personnel and equipment, etc.

The drill manager should clearly communicate expectations to the scenario development team and controllers concerning the handling and forwarding of materials used to prepare for, and conduct, the drill. More specifically, personnel must observe all Safeguards and 10 CFR 2.390 requirements.

EP and Security department personnel responsible for drill planning are encouraged to become familiar with the concepts and principles of the NIMS and the Incident Command System (ICS). FEMA maintains a web page with NIMS/ICS training material links; refer to https://training.fema.gov/nims/.

The local news media should be notified that the site will be conducting a HAB drill; these contacts are intended to preclude unexpected, and possibly inaccurate or alarming, news coverage. Contact with media outlets may also be used to provide instructions concerning reporting locations and allowed extent-of-play if their participation is desired. Pre-drill outreach efforts to the media should be coordinated with the appropriate ORO officials.

3.2 DRILL SUPPORT FROM SECURITY

The engagement and support of site Security Department management is critical to the successful development and execution of a HAB drill. Security management should be briefed early in the planning phases of the drill so that there is a common understanding of the drill objectives and the site Security resources needed to ensure success. Security personnel serving on a drill scenario development team can provide valuable direction and assistance in the following areas.

- Knowledge of security-related procedures, equipment and timelines
- Development of an attack sequence, and related reports and indications
- Devising methods to realistically simulate communications with, and response actions by, security facilities, officers and supervision

- Facilitate drill planning and preparation with local, State, Federal and tribal law enforcement personnel
- Providing knowledgeable controllers for security facilities/functions
- Verifying that no safeguards information is released in drill materials or during the drill, and that security sensitive information is appropriately identified and controlled
- An assessment of internal and external drill operating experience to determine applicability to security procedures

3.3 INCIDENT COMMAND POST

The NIMS and ICS assign responsibility for establishing an ICP to the Incident Commander. Prior to a HAB drill, licensee personnel should verify the location of the ICP with the Incident Commander. This location should have the resources and capabilities needed to facilitate performance of ICP functions either in-place or readily available. To this end, the following facility readiness elements should be checked.

- Located at an appropriate standoff distance from general area of the attack
- Accessibility by offsite responders
- Security of the selected location and related facility access controls
- Work spaces
- Communications capabilities
- AC power source (ideally, independent of power block buses)
- The location should accommodate the LLEA and other first responder vehicles and equipment supporting drill play to the extent practicable; however, there is no requirement to modify a facility or make changes to the surrounding grounds
- Access to site/plant layouts, and other displays necessary to effectively manage law enforcement, fire and medical responses

Also verify that provisions are in place to support the functions performed by liaisons from the licensee's organization and OROs. Review procedural or other guidance for dispatching licensee and ORO liaisons to the ICP.

In order to avoid negative training, the ICP should be established in a location that would be used during a real attack, and not one selected primarily to facilitate drill performance.

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⁶ The location of the ICP need not be in a fixed facility.

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Drill-focused placement may mask challenges to logistics, communications, and security or preclude the need for important discussions (e.g., how to respond when the ICP is located within an area that must be evacuated). In cases where a normally expected ICP location could result in drill play that negatively affects site operation, an alternate location may be used.

Due to the potential value to an adversary, the location of a pre-planned ICP should be treated as 10 CFR 2.390 information.

3.4 PLANNING FOR RESTRICTED MOVEMENT BY ONSITE PERSONNEL

The movement of onsite personnel during and following a hostile action will be restricted by Security and LLEA requirements, and a significant period of time will pass before these restrictions are lifted. It is therefore necessary for protocols to be established that would allow for the controlled movement of onsite personnel in order to accomplish event mitigation actions. These actions may include firefighting, delivering medical emergency treatment, damage assessments, manipulating or repairing equipment, or implementing alternate strategies to maintain or restore a nuclear safety function (e.g., establish core cooling using a FLEX or B.5.b pump). Planned provisions should also be in place for facilitating activation and mobilization of the ERO. The drill manager should ensure that movement protocols have been developed, and that all affected organizations and agencies are aligned on the methods for implementation.

A site may have specific provisions for facilitating movement of an operator or other on-shift individual during an attack and, if so, this action has been considered during the development of protective strategies. As used in this document, the escorting of other site personnel would usually take place after there is high confidence that all adversaries have been neutralized and/or contained within a defined area (i.e., a post-attack environment). For example, escorts could be used to facilitate movement to an assembly area, an emergency response facility or a repair location. Escorts ensure that individuals follow travel routes specified by Security and LLEA (e.g., to help minimize disturbances to a crime scene) and, if armed, provide some protection against a possible secondary attack.

3.5 FIREFIGHTING AND MEDICAL EMERGENCY RESPONSE

A HAB drill should demonstrate the ability to coordinate initial response actions among the on-shift ERO, LLEA and first-responder agency decision-makers; however, the drill manager has several options with respect to the performance of in-field/on-scene firefighting and emergency medical services. Reflecting these options, the drill extent-of-play should specify whether:

• There will be no actual deployment of vehicles or personnel. If this option is selected, a controller or control cell should be available and prepared to simulate all communications with firefighting and emergency medical services personnel. The expectation is that controller communication of resource and response information to ERO and ICP players will be reasonably realistic (i.e., dynamic and interactive in nature). The practice of passing scripted messages simulating these communications must not be used.

- One or more vehicle(s) and personnel will actually be deployed to specified in-field/on-scene locations.
- A combination of the above two options will be used (e.g., a fire truck will be dispatched but ambulances will be simulated).

The drill extent-of-play should clearly describe the expected simulated and/or actual resources and response actions. At least some of the controllers overseeing or simulating firefighting and medical emergency activities should be from those agencies participating in the drill. To promote realistic communications with the ICP and where practicable, controllers who are simulating firefighting or medical emergency response personnel should use the same communications equipment that would be employed by those personnel in an actual event.

Actions that would normally occur inside the Protected Area may be simulated at other locations. If play will occur inside the Protected Area, the drill manager should determine access needs and complete necessary access requirements before the drill in order to facilitate prompt entry into the Protected Area during the drill.

Consider the need to conduct "walk-downs" with in-field/on-scene drill controllers to review assigned observation areas and control expectations. These walk-downs should identify any safety, security, operational or radiation protection concerns. Use of LLEA vehicles or equipment should be also reviewed and evaluated.

Prior to the drill, the licensee should verify that workable radiation protection measures are in place for offsite first responders entering the site and/or the Protected Area under the postulated scenario conditions. Some of these measures may entail planned arrangements for actions that can be taken by first responders without the assistance of licensee personnel (e.g., obtaining and using dosimeters).

3.6 COMMUNICATIONS

Provisions should be in place to facilitate communications between responders and controllers at the ICP, Security facilities (e.g., the location of the drill CAS), ERO facilities (including alternative facility locations), in-field/on-scene locations and key ORO facilities (e.g., a State or county Emergency Operations Center). Consideration should be given to the availability of internet access, and mobile and local networks, to support computer and personal device use (e.g., a building Wi-Fi network). All communications paths should be clearly defined and tested prior to the drill. Communications paths and protocols should be reviewed with key offsite decision-makers (e.g., method for transmitting plant status updates, threat-related information, etc.).

Security and Operations personnel should be able to communicate in terms that both can

⁷ Some ICS planning tools such as Form ICS-205, Incident Radio Communications Plan, may be useful.

readily understand during high-stress conditions. To support accurate and timely emergency declarations, it is important that Security personnel characterize the security event for the Shift Manager using the defined terms appearing in security-related Emergency Action Levels (EALs); these terms are typically SECURITY CONDITION and HOSTILE ACTION. It may be necessary to develop aids that cross-reference alpha-numeric designations for buildings, gates or doors, used by Security, with noun-names used by Operations. An effort should be made to identify terms or phrases that have different meanings to Security and Operations personnel – for example, a Security Shift Supervisor may state that a target set component is "lost" based on safeguards contingency plan requirements but operators could see the component as still available because they've had no Control Room indications of degraded performance.

Differences in the understanding of terms and phrases may also occur between Security and LLEA representatives at the ICP - for example, use of the term "neutralized" vs. "down," reactor "fuel" vs. "fuel" feeding a fire, etc.). Discussions should be held to identify potential misunderstandings.

The licensee should determine if changes to communications equipment in the simulator are needed to support the drill scope and extent-of-play. Changes may be necessary to duplicate certain Control Room capabilities. If duplication is not feasible, then suitable compensatory measures should be identified.

Additional considerations regarding communications are listed below.

- If a communications capability is dependent upon site personnel and offsite responders trading radios with one another, ensure that this action can be performed given the security situation created by the scenario.
- Availability of replacement batteries and/or chargers to support use of cellular telephones or radios.
- Adequacy of communications methods for ERO liaisons reporting to the ICP.
- If applicable, evaluate deployment and use of designated ORO communications vehicles (e.g., a mobile command post). Validate communications interoperability, and related procedures and training.
- Consider testing alternate means of communication (e.g., by simulating a loss of cellular phone service) at some point well into the drill.
- Other improvements may be identified by reviewing NRC Information Notice 2007-12, Tactical Communications Interoperability between Nuclear Power Reactor Licensees and First Responders, dated March 15, 2007 (ADAMS Accession No. ML070710233).

3.7 PRIORITY SETTING AND TRACKING

A HAB drill includes participation by individuals, agencies and facilities that do not normally respond, or respond differently, to a radiological emergency (i.e., a non-HAB emergency). These include on-shift security supervision, the Central Alarm Station (CAS), LLEA, ICP, Unified Command Center (UCC), staging areas, etc. During a HAB drill, the ERO processes routinely used to establish, communicate, monitor and change response priorities could be impacted by one or more of these individuals, agencies and facilities (e.g., a new decision-maker or concurrence is needed). To promote timely completion of tasks, the priority setting and tracking process should be reviewed to ensure that priorities involving coordination with multiple organizations can be effectively communicated and managed. Pre-drill tabletops or briefings should stress the need for all organizations and agencies to maintain alignment on response priorities, particularly those supporting the performance of time-critical actions needed to maintain or restore nuclear safety functions (e.g., core cooling).

The ICP Liaisons play a key role in coordinating priority setting and tracking between ICP and ERO decision-makers. To be successful, the liaisons should be engaged with LLEA and ORO personnel at the ICP, and promote communications between the ICP, ERO facilities and Security.

3.8 EP PERFORMANCE INDICATORS

Guidance on awarding ERO Participation performance indicator credit for participation by an ERO Key Position holder in a HAB drill is provided in NEI 99-02, *Regulatory Assessment Performance Indicator Guideline*, and NEI 99-02 FAQ 15-04, *Clarification on Granting Participation Credit During a HAB Drill/Exercise*. This information should be considered when making drill assignments.

3.9 PRE-DRILL BRIEFINGS AND LEARNING OPPORTUNITIES

Key ERO and offsite participants should receive a thorough briefing on the proposed drill scope, extent-of-play and performance expectations. Topics could include safety considerations, awareness that scenario elements will likely be different than those defined by the Design Basis Threat, expected site access routes and protocols, and understanding that a secure condition at the site will not be reestablished during the drill (i.e., no "all clear" or unrestricted movement of personnel is allowed). The Incident Commander and LLEA representatives should be briefed on the importance of facilitating timely ERO mobilization following the attack, and after security and law enforcement decision-makers have determined that the site is secure enough to allow prioritized, limited movement of personnel. This timeframe would be well before the site is considered secure (i.e., an "all clear" condition).

Consider conducting workshop-type sessions to improve familiarity and proficiency with assigned functions and tasks, particularly those requiring coordination with other response organizations and agencies.

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The licensee should consider inviting officials from offsite first-responder agencies, including LLEAs, to a plant tour; this activity will allow offsite officials to gain familiarity with the plant layout and a better understanding of the industrial aspects of the facility. This visit could also include an opportunity to observe a HAB scenario presented to control room operators in the plant simulator. These types of site visits provide important insights to ORO and law enforcement personnel and promote better response coordination.

Given the significant role played by the Incident Commander, it is recommended that this individual be afforded an opportunity to observe a HAB drill at another site before participating in one. An observation opportunity may also benefit EP and Security Department personnel who have not previously planned and implemented a HAB drill.

3.10 PRE-DRILL TABLETOP

Prior to the drill, a licensee should consider the need to conduct an integrated tabletop with the OROs and first responder agencies participating in the drill. A tabletop provides key ERO, ORO and first responder agency personnel with an opportunity to review and discuss their respective roles, priorities, and response actions. If needed, the tabletop should be conducted 4 to 8 weeks before the HAB drill, and all key ERO and offsite decision-makers should be represented. Refer to Appendix B for information on conducting a pre-drill tabletop drill.

4 SCENARIO DEVELOPMENT

This section discusses preparation tasks and support needs unique to a HAB drill scenario. Each item should be reviewed, and identified actions incorporated into the appropriate site drill scenario preparation process and schedule.

4.1 SCENARIO TEAM

A team of representatives from key onsite organizations including EP, Operations and Security should develop the drill scenario. Collaboration will also be required with representatives from OROs and offsite first-responder agencies such as LLEA and firefighting agencies. The licensee should engage ORO and first responder agency personnel early in the scenario development process to define and discuss the unique challenges posed by a HAB drill.

Depending upon the drill or exercise scope and extent-of-play, representatives from regional or Federal organizations may also be invited to participate in scenario development (e.g., the Federal Bureau of Investigation, US Coast Guard, etc.).

4.2 SCENARIO DEVELOPMENT AND KEY ATTRIBUTES

When developing a HAB scenario, the first decision to be made is whether the attack will be land-based, waterborne or airborne. As used here, an airborne attack refers to the act of an individual(s) commandeering of a large aircraft and intentionally flying it into plant structures. The scenario team must also determine which alternative facilities and/or staging areas will be used, if any, as this will likely affect the actual or assumed drill date and time.

Figures 4-1 and 4-2 present recommended frameworks for developing a HAB drill scenario. Each framework breaks the scenario down into four phases, with proposed timing and attributes for each phase. It is recognized that the timeframes for certain actions may be compressed relative to what would actually be required (e.g., establishment of perimeter control and initial sweep of the site); however, this compression may be necessary in order to conduct the drill within a reasonable period of time.

With respect to an adversary force, the scenario may specify a number of attackers and associated weaponry different than that defined by the Design Basis Threat (DBT).

Airborne attack scenarios should reflect realistic threat detection and intercept timelines, and notification procedures. The goal is to drive more realistic implementation of response actions and preclude negative training. To this end, licensees should review Regulatory Guide 1.214, *Response Strategies for Potential Aircraft Threats*. With regards to initial threat notification by the NRC and subsequent open-line communications, the drill manager should consider discussing appropriate scenario message/script content with a member of the NRC Headquarters Operations staff. Also, the drill manager may wish to make a request that an off-duty Headquarters Operations Officer play in the drill by performing the initial threat notification and communications to the Control Room.

The scenario events are expected to cause, or threaten to cause, damage to irradiated fuel, and be of sufficient magnitude to drive ongoing assessment of plant conditions, formulation of mitigating strategies and dispatch of teams to perform repair and corrective actions. The threat of damage may be directed towards irradiated fuel in the reactor core or in the spent fuel pool. In cases where an exercise scenario will not require the declaration of a General Emergency, the licensee will need to coordinate demonstration of required offsite objectives with OROs and FEMA (e.g., use of out-of-sequence demonstrations).

All potential Initiating Conditions (ICs)/Emergency Action Levels (EALs) that could be used to declare an emergency classification level should be identified in the drill timeline. For example (and using NEI 99-01 IC numbering), if scenario events are such that the Emergency Director could realistically and accurately escalate to a General Emergency based on either IC SG1, *Prolonged loss of all offsite and all onsite AC power to emergency buses*, or IC HG1, *HOSTILE ACTION resulting in loss of physical control of the facility*, then both ICs should be referenced in the timeline as potential classification upgrade paths. Also, scenario developers should verify that the described scenario condition(s) are aligned with the targeted IC/EAL wording and the associated basis and, if needed, include a clear description of the classification rationale in the scenario package (e.g., specify the "safety functions" that are not maintained, or the plant and radiological conditions that are indicative of "Imminent fuel damage"). Finally, the scenario timeline should clearly identify when each 15-minute emergency classification assessment period begins (i.e., exactly when the 15-minute classification clock starts). Vigorous scenario challenge review meetings are encouraged.

Scenario events and drill play may lead to a situation where an ERO decision-maker determines a Protective Action Recommendation (PAR) which is different from that described in the scenario package, and that is subsequently assessed as accurate based on the conditions known to the decision-maker at the time of the decision. Scenario developers should recognize that information flow during a drill is dynamic and may not unfold as anticipated (e.g., the times that certain conditions are known may be different than what was expected). If a PAR is contingent upon certain information being available to a decision-maker, and another PAR is possible if that information has not been received, then the scenario timeline should describe both potential PARs and the conditions under which they would be made (e.g., information set 1 = PAR 1 while information set 2 = PAR 2).

In conjunction with offsite stakeholders, scenario developers will need to determine if the scenario will include a radiological release and, if so, of what magnitude and duration. At a minimum, the scenario should present conditions which will, absent mitigating actions, lead to a radiological release (i.e., a potential for a radiological release). The scenario may be structured such that a radiological release is prevented if drill players take appropriate and timely mitigating actions. In cases where an exercise scenario will not include a radiological release, the licensee will need to coordinate demonstration of required offsite objectives with OROs and FEMA (e.g., use of out-of-sequence demonstrations).

A HAB scenario should address the following elements:

- Scenario messages or controller scripts contain detail sufficient to ensure that on-shift responders (e.g., operators, security supervision and facilities, etc.) fully understand the nature and consequences of the attack. Consideration should be given to developing contingency messages to direct or control key decisions and actions needed to maintain scenario continuity; this will allow continuance of the planned drill learning opportunities in the event of an incorrect decision or action.
- If needed, the scenario package contains drill-specific emergency messages to the plant staff and ERO (e.g., plant page announcements, pager text messages, etc.). These messages should contain the elements of real event messages but be modified as needed to reflect the drill extent-of-play. For example, a plant page announcement may include a statement such as "Personnel not assigned to the drill should continue with normal duties." Alternately, real event messages could be used by players to accomplish the demonstration of an objective but not actually transmitted outside a facility.
- The scenario should describe significant collateral damage that could be expected from the postulated scenario events.
- The scenario must not postulate a "site is secure" / "all clear" condition which enables unchallenged or unrestricted movement of onsite personnel. Rather, the ICP and Security must assess post-attack site conditions and coordinate the safe deployment of on-shift staff, mobilization of the ERO, dispatch of repair teams and evacuation/release of non-essential personnel in a deliberate and prioritized manner. Example strategies supporting personnel movement include use of designated routes, allowing movement within cleared areas, and use of escorts or vehicles.
- The damage resulting from the scenario events should be sufficient to require the need for engineering assessments and development of repair plans.
- Ensure that the events and cues necessary to drive decision-making concerning the
 deployment of firefighting and medical emergency resources are well integrated into the
 scenario timeline and related materials. The number and location of injuries and/or
 casualties described in the scenario should be commensurate with the nature of the
 postulated attack.
- The scenario package should contain ancillary attack-related information necessary to support more realistic "play". For example, a scenario for an airborne attack should specify the type of aircraft, airline name, flight number, points of departure and arrival, estimated number of passengers and crew, estimated fuel on-board, etc.

Options for scenario developers include the following:

• The drill initial conditions may specify that certain equipment is out-of-service (e.g., undergoing maintenance). These out-of-service components may compound the results of the attack or provide a success path for the ERO. This approach may also assist with the masking of a complete target set, e.g., a critical component is out-of-service, not

affected by the attack and later returned to service to mitigate the event.

- An "insider" may be used to facilitate an attack or exacerbate its effects. Scenarios using an "insider" should include the additional information necessary to support "play" for this element. For example, the individual's name, badge number, location and areas traversed.
- Use of diversionary actions, threats or attacks at offsite locations.
- Including a threat that persists throughout the duration of the drill and therefore must be taken into account by responding organizations and agencies. For example, an adversary has been isolated in an area or room with no unobserved way out or the identification of a suspected explosive device.
- OROs may wish to develop scenario materials to support demonstration of an offsite
 response capability or function specifically related to the response to a hostile action. For
 example, a county emergency management agency could develop scenario materials to
 demonstrate an area triage facility. Demonstration opportunities or requirements should
 be determined as the scenario is being developed, and scenario injects or mini-scenarios
 used to drive these demonstrations should be shared with licensee's drill manager.

4.3 DEPLOYMENT OF EVENT MITIGATION TEAMS

The drill scenario must provide for demonstration of the ability to dispatch personnel or teams to perform time-sensitive event mitigation actions at onsite locations. Mitigation actions may include firefighting, delivering medical emergency treatment, damage assessments, manipulating or repairing equipment, or implementing alternate strategies to maintain or restore a nuclear safety function (e.g., establish core cooling using a FLEX or B.5.b pump). Teams may be dispatched from onsite or offsite locations, and their deployments must be controlled in accordance with the established movement protocols and methods discussed in Section 3.4. Expectations for demonstration of team deployments are discussed in Section 5.3.

4.4 SCENARIO TIME PROGRESSION

The scenario frameworks illustrated in Figures 4-1 and 4-2 "accelerate" through the immediate post-attack period to a point where deployment of offsite response assets and mobilization the ERO may be considered (i.e., completion of some tactical and LLEA actions may be assumed to have occurred within shorter than expected timeframes). This approach is used to facilitate demonstration of all drill objectives within a reasonable period of time. Drill messages, or instructions from a controller, should be used to inform participants of the actions which were completed during this time-compressed period (e.g., description of post-attack conditions, establishment of perimeter control and initial sweep of the site, etc.). This will allow the Incident Commander, in conjunction with key Security and ERO decision-makers, to demonstrate the ability to plan for, and direct, the deployment of offsite response assets and mobilization of the ERO.

Notwithstanding the time compression discussed above, the drill should be run real-time or as near real-time as feasible. More specifically, time jumps should be avoided as these can be a source of confusion to drill participants.

Applicable State and local response organizations should be made fully aware of any potential adverse impacts that a time jump or time compression may have on offsite decisions and actions.

4.5 SAFEGUARDS/SECURITY SENSITIVE INFORMATION

HAB drills and exercises introduce the issue of appropriate handling of safeguards information. HAB scenarios need not and should not contain safeguards information. However, if the licensee finds it necessary to include safeguards information in the scenario package, then those sections must be handled in accordance with site security requirements and NRC regulations. Nothing in this guidance should be construed as allowing the release of safeguards information to unauthorized personnel.

Due to potential information value, the security-related sections of the scenario package should be treated as security sensitive and handled in accordance with the requirements of 10 CFR 2.390. The sharing of experiences and insights with OROs and the industry is expected; however, caution should be used to ensure that security sensitive information is protected and not released to unauthorized personnel.

When developing the scenario, care should be taken when selecting the equipment damaged by the postulated attack; a complete "target set" should not be specified. If destruction of a complete target set is necessary to meet required drill objectives, then the scenario must specify other damaged or out-of-service equipment such that an outside observer could not identify which components comprise a complete target set.

The drill manager should discuss the controls for handling scenario-related information and materials with Security Department personnel.

4.6 MINI-SCENARIOS/MSEL DETAIL DESCRIPTIONS

The following information is typically placed in stand-alone mini-scenarios or included in the Master Scenario Events List (MSEL).

To support implementation of a land-based or waterborne attack timeline, scenario developers must create a detailed description of the Hostile Action, i.e., adversary force movements and actions, and related events, occurring during the attack phase. This timeline should include a listing of officer reports, camera observations, door alarms and other information that can be provided by a controller to describe the progress of the attack (e.g., number and location of observed casualties and fires, etc.). The attack timeline must not use

⁸ As defined in site-specific safeguards documents.

actual attack progression timing as described in security program documents; however, the selected event sequence and times should be credible.

Detailed scenario information should be developed to support implementation of firefighting and medical response "play" and/or simulation. If firefighting and medical response resources will be simulated, then appropriate controllers (e.g., in the ICP) should have scripts that can provide information on available resources – number and location of firefighters, emergency medical technicians, fire trucks, ambulances, etc. Fire-related information should describe conditions such as the location/footprint of a fire, fire and smoke characteristics, wind direction and burn/extinguishment times. Medical response information should address the location of the dead and wounded, vital signs of the wounded and simulated victim names. Consider developing visual aids to assist in-field/on-scene controllers with drill implementation.

Scenario developers may wish to consider if credit for a plant fire or medical response drill can be taken for the actions performed in the HAB drill.

4.7 Scenario Confidentiality

It is recognized that the planning, scheduling and logistical arrangements necessary to conduct a HAB drill or exercise will challenge the normal expectations for scenario confidentiality. For example, a HAB tabletop or drill will be conducted prior to a HAB exercise. In addition, prior reviews and approvals by various site personnel may be needed to pre-stage/pre-clear offsite responders and vehicles normally associated with a HAB response.

Although some players may infer that a HAB scenario will be used in a drill or exercise, under no circumstances may a player know any details of the scenario (i.e., specific event timeline and related information). The scenario used for a HAB exercise must be sufficiently different from that used in the immediately preceding tabletop and/or drill. Specifically, the elements and consequences of the Hostile Action (attack) must be varied between the scenarios, e.g., attack type or direction, number of attackers, attack timeline, damage and casualties, offsite consequences, etc.

Provided that the above requirements are met, it is acceptable for the same "players" to participate in a tabletop and/or drill, and the subsequent exercise.

⁹ This is meant to include any drill for which participants will receive ERO Participation performance indicator credit. In other words, the drill must be a valid performance enhancing opportunity as described in NEI 99-02.

FIGURE 4-1
Framework for a Land-Based or Waterborne Hostile Action-Based (HAB) Drill

Attack Phase (15 to 30 minutes duration)	Initial Sweep Phase (30 to 60 minutes duration)	ERO Mobilization Phase (30 to 60 minutes duration)	Event Mitigation Phase (remainder of drill)
 Events must meet threshold for a HOSTILE ACTION within the Protected Area Provide detailed attack timeline and realistic communications interfaces (e.g., a control cell to simulate CAS) Onsite protective measures in effect as appropriate to date and time (e.g., "duck and cover") Emergency classification and implementation of emergency plan; a Protective Action Recommendation (PAR) may be issued 	 Local Law Enforcement Agencies (LLEA) and Security discuss the attack and review immediate Security needs LLEA perform initial sweep of Protected Area and/or Owner Controlled Area (OCA), and establish perimeter control and access restrictions Onsite protective measures remain in effect (e.g., "duck and cover") Control Room may request immediate support for limited movement of personnel to support plant stabilization 	 LLEA completes initial sweep of Protected Area and/or OCA, and establishes safe movement areas/corridors Operations and ERO personnel may move in accordance with directions from ICP and Security Licensee liaison personnel report to the ICP ICP develops "damage footprint" Offsite first-responders enter the Protected Area and commence operations (e.g., firefighting and medical responses). 	 Emergency response facilities are activated; may operate primary and/or alternative facilities Projected or actual damage to irradiated fuel. Radiological release (if included in the drill scope) or potential for a release. Licensee may issue a Protective Action Recommendation (PAR) if not already performed Offsite authorities may develop a protective action decision in consultation with the ICP

Attack Phase	Initial Sweep Phase	ERO Mobilization Phase	Event Mitigation Phase
(15 to 30 minutes duration)	(30 to 60 minutes duration)	(30 to 60 minutes duration)	(remainder of drill)
 Use of alternative facilities or staging areas as appropriate to date and time Incident Commander notified of attack; proceeds to Incident Command Post (ICP) Begin staging offsite first-responders at designated locations Attack phase terminates when the appropriate players are informed that all known adversaries are neutralized 	 Incident Commander advised of immediate Control Room needs and directs appropriate support (e.g., escorts) Offsite first-responders continue staging; await response direction from ICP ICP undertakes discussion and decision-making necessary to support deployment of offsite response assets and ERO movement and mobilization 		 At least two teams must be dispatched to perform event mitigation actions prior to drill termination per discussion in Section 5.3. Demonstrate effective and controlled release of information from the JIC

FIGURE 4-2
Framework for an Airborne Hostile Action-Based (HAB) Drill

Threat-to-Impact Phase	Initial Post-Impact Phase	ERO Mobilization Phase	Event Mitigation Phase
(15 to 30 minutes duration)	(30 to 60 minutes duration)	(30 to 60 minutes duration)	(remainder of drill)
 Events must drive entry into an airborne threat response procedure, i.e., the aircraft must be considered a NORAD "Track of Interest" Provide detailed threat timeline and realistic communications interfaces (e.g., a control cell to simulate 	 Attack consequences may drive entry into Extreme Damage Mitigation Guidelines Local Law Enforcement Agencies (LLEA) establish perimeter control and access restrictions Control Room may request permission for limited movement of personnel to support plant stabilization, or fight fires Incident Commander advised of immediate Control Room needs and directs appropriate support 	 Operations and ERO personnel may move in accordance with directions from ICP and Security [Note – Even though the aircraft impact has occurred, decisions affecting ERO mobilization should consider the potential for subsequent attacks.] Licensee liaison personnel report to the ICP ICP develops "damage footprint" Continuance of firefighting and medical response efforts 	 Emergency response facilities are activated; may operate primary and/or alternative facilities Projected or actual damage to irradiated fuel. Radiological release (if included in the drill scope) or potential for a release. Licensee may issue a Protective Action Recommendation (PAR) if not already performed Offsite authorities may develop a protective action decision in consultation with the ICP

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Threat-to-Impact Phase (15 to 30 minutes duration)	Initial Post-Impact Phase (30 to 60 minutes duration)	ERO Mobilization Phase (30 to 60 minutes duration)	Event Mitigation Phase (remainder of drill)
 Use of alternative facilities or staging areas as appropriate to date and time Incident Commander notified of attack; proceeds to Incident Command Post (ICP) Begin staging offsite first-responders at designated locations Attack phase terminates when the appropriate players are informed of the aircraft impact 	 Offsite first-responders enter the Owner Controlled Area (OCA) and/or Protected Area as directed by IPC and Security, and commence operations (e.g., firefighting and medical responses) ICP undertakes discussion and decision-making necessary to support ERO movement and mobilization 		 Events may drive simulated implementation of strategies to respond to a loss of large areas of the plant due to explosions or fire [per 10 CFR 50.54(hh)(2)]. At least two teams must be dispatched to perform event mitigation actions prior to drill termination per discussion in Section 5.3. Demonstrate effective and controlled release of information from the JIC

5 HAB DRILL IMPLEMENTATION

This section describes some of the actions necessary to implement a successful HAB drill; these actions may be applicable to players or controllers. Included are items identified from a review of industry operating experience and observed good practices. Drill managers should carefully consider each item and incorporate applicable recommendations into the drill and related implementation processes.

5.1 ON-SHIFT PERSONNEL RESPONSE

HAB drills should be conducted using the site's simulator control room.

As with other aspects of operator training, simulator play during a HAB drill should be as realistic as possible. Any on-shift staff member not normally located in, or immediately adjacent to, the Control Room, and whose travel to the Control Room would be prohibited by the postulated scenario events, should not be allowed to participate in Control Room response functions. If the event affects multiple units and two operating crews are participating in the drill, then controllers should restrict cross-unit support in a manner that reflects the realistic demands placed on the operators of the unaffected unit (i.e., prohibit help that would not be available in a real event).

A HAB drill requires the dynamic demonstration of a coordinated response to a Hostile Action by on-shift Operations and Security personnel. To effectively demonstrate this objective, a simulated CAS should be established (i.e., a control cell). The player(s) assigned to the CAS should be familiar with the operation of that facility and capable of simulating its responses; the staffing of a simulated CAS may be less than the actual facility but must be sufficient to support drill play. The events associated with the postulated attack should be presented to the CAS individual(s) sequentially and in real-time by a security controller (e.g., provide realistically available information such as officer reports, camera observations, intrusion/door alarms, etc.). The CAS player is expected to assimilate the information provided by the controller and formulate their own communications with the Control Room in accordance with site-specific procedures and training. The practice of using a controller in the Simulator to pass messages simulating security communications with Control Room personnel must not be used.

Individuals from Security should be assigned to participate in other security-related positions that are critical to demonstrating effective coordination between security and the Control Room and ERO (e.g., on-shift security supervision).

For an airborne attack scenario in which the NRC is not a participant, it will be necessary to establish a control cell to simulate communications with NRC Headquarters Operations Officer (HOO). These communications should be structured to occur as realistically as

¹⁰ Depending upon site-specific procedures, this demonstration may also require participation by a simulated Secondary Alarm Station (SAS). In those cases, the CAS-related guidance in this document should be assessed for applicability to the drill SAS as well.

practicable (e.g., use of communications equipment, content and timing of messages, etc.).

5.2 INCIDENT COMMAND POST RESPONSE

To the degree practicable, offsite personnel should respond to the Incident Command Post (ICP) and the site in real-time, i.e., do not pre-stage personnel unless normal travel times are prohibitive. If personnel are pre-staged, develop appropriate time delay criteria to be used before allowing individuals to begin "play". Delayed individuals should wait in an area away from any active "play" activities and related communications. Where possible, actual communications methods should be used to communicate with pre-staged individuals.

The Incident Commander should direct measures to control access to, and protect, the ICP.

To facilitate better understanding of post-attack conditions, the ICP staff should develop a "damage footprint" – a site/plant layout graphic indicating locations of damage, hazards and casualties.

The licensee should dispatch liaisons to the ICP.

- A liaison from the site's security department to interface with the Incident Commander, and representatives from local and regional law enforcement.
- Liaison(s) knowledgeable in the areas of operations and radiation protection to assist with overall response coordination, and to facilitate timely communications between the ICP and ERO decision-makers.

The ICP liaisons play an important role in coordinating ERO goals and actions with ORO and law enforcement personnel in the ICP. Experience has shown that active engagement by ICP liaisons with offsite decision-makers in the ICP is a key success factor in HAB drills. These individuals should be able to render complex technical information into statements that can be readily understood by those without a background in nuclear power, and articulate the basis for requested actions and priorities.

OROs should consider dispatching a liaison(s) to the ICP to assist with overall response coordination, and to facilitate timely communications between the ICP and ORO decision-makers. Actions directed by the Incident Commander and/or LLEA, such as road closures, evacuation of the public located near the site, and augmentation of resources, could have a significant impact on protective action decision-making at State and local emergency operations centers.

5.3 DEMONSTRATING DEPLOYMENT OF ERO TEAMS

The capability of the ERO to deploy event mitigation teams during and following a hostile action is addressed by "Recommended Objective" 5 and 9 (of Appendix A). As appropriate to the team mission and composition, the deployment of an event mitigation team may

include demonstration of the ability to:

- coordinate team movement with Security and/or LLEA,
- designate team travel routes and arrival points,
- specify expected communications en route and upon arrival,
- stipulate acceptable credentials for passing through checkpoints, barriers and boundaries,
- assign Security and/or LLEA escorts when necessary,
- provide a pre-dispatch briefing,
- notify affected individuals or facilities that the team has been dispatched, and
- track the team to ensure arrival.

Although the deployment of some event mitigation teams may be simulated, the drill extent-of-play should provide the actual dispatch and movement of at least two teams; depending upon the nature of the assignment, a "team" may be comprised of one person. As part of this demonstration, each team should be accompanied by a Security and/or LLEA escort. A team may originate from an in-plant location (e.g., the Control Room), or from an onsite or offsite emergency response facility (e.g., the OSC, an alternative facility or staging area). A team dispatched to a location outside the Protected Area should actually travel to and arrive at its designated destination. A team originating from a location outside the Protected Area and whose destination is inside the Protected Area may end their demonstration at the Protected Area boundary.

5.4 IN-FIELD/ON-SCENE RESPONSES

Pre-drill briefings should ensure that drivers of responding vehicles from offsite agencies know site access routes, entry requirements and destinations. These should reflect procedural guidance or agreed upon protocols, unless the drill extent-of-play dictates otherwise.

In-field/on-scene controllers must be knowledgeable in the functions that they are controlling (e.g., security actions being controlled by security personnel or firefighting actions controlled by individuals with firefighting expertise). Field controllers should have a means to communicate with the drill manager and other required locations/individuals.

In-field/on-scene "play" by emergency medical service responders may be enhanced through the use of real individuals or mockups such as "dummies" or body posters (a cardboard cutout) to simulate casualties. If used, include a means to provide vital sign information to the players (e.g., a tag).

5.5 ERO MOBILIZATION

Decision-makers must develop a plan for prompt ERO mobilization during the "Initial Sweep Phase," for a land-based or waterborne attack, or the "Initial Post-Impact Phase," for an airborne attack. Expected decision-makers involved in this discussion include the Incident Commander, senior security supervision and a senior Emergency Response Organization (ERO) Manager (which may be the Shift Manager). Discussion should cover

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the status of the plant and reactor core, security functions, fires, and casualties; the potential for a secondary attack; accessibility and availability of emergency response facilities; use of alternative facilities if necessary; and strategies to facilitate ERO mobilization and implementation of mitigation actions (travel routes, escorts, etc.).

Once an ERO mobilization plan is developed, a controller should inform the players that they may now direct the actions necessary for mobilizing the ERO. Players should actually perform these actions to the extent practicable (e.g., plant page announcements, pager messages, etc.). ERO members should respond to their facilities in real-time; however, time compression and/or pre-staging may be used to maintain scenario flow and continuity. Time compression and/or pre-staging may be required to support simulated or actual use of remote staging areas or alternative facilities.

Controllers should closely monitor the formulation and delivery of post-attack instructions to the plant staff and ERO members (e.g., plant page announcements, pager text messages, etc.). These are the messages that provide direction concerning movement of personnel, and associated cautions and constraints. Messages contained in procedures may be modified as needed to reflect the drill extent-of-play. Controllers should be prepared to direct or deliver messages as necessary to ensure drill continuity.

5.6 DRILL CRITIQUE

Each HAB drill must be critiqued to identify weaknesses and opportunities for improvement. Licensees should modify their critique process as necessary to ensure a thorough review and evaluation of HAB-related drill objectives. Weaknesses should be entered into the appropriate site corrective action process.

6 PUBLIC AND MEDIA INFORMATION

6.1 Drill Participation

The licensee should invite public information officials from OROs, local first-responder agencies, and responding Federal, State and local law enforcement agencies to participate in HAB drills.

Prior to conducting the drill, consideration should be given to conducting a HAB tabletop focused exclusively on public information functions and related operations at the Joint Information Center (JIC). Representatives from Security, Communications, OROs, local first-responder agencies, and responding Federal, State and local law enforcement agencies should be invited to participate. This type of tabletop is beneficial for identifying potential problem areas, defining protocols for the release of public information and achieving aligned expectations. The expected operation of licensee and ORO Joint Information Systems (e.g., social media) during and following a hostile action should also be discussed to determine if changes are necessary to established processes.

6.2 OPERATING EXPERIENCE AND GOOD PRACTICES

The following items were identified from a review of industry operating experience and observed good practices. Licensees are encouraged to consider each item and determine if changes to public information protocols or procedures are warranted. Potential changes should be discussed and validated with all Company, ERO and offsite stakeholders.

- A. Public information personnel should be prepared to face several challenges during a HAB drill:
 - Potential for a rapid series of significant events and consequences
 - Events that may be visible and/or audible to offsite observers gunshots, fires, explosions, etc.
 - Sensitivity of, and release restrictions on, certain information
 - Potential to deal with events entailing fatalities and mass causalities
 - Different set of external stakeholders, and varying expectations concerning the review and approval of information provided to the media and public
 - Potential delay or inability of ERO communications personnel to respond during the initial phase of the event when there are restrictions on the movement of onsite personnel

- B. Public information procedures should have guidance on the types of information that should not be released to the media or public during and following a hostile action. Prohibited content would include security-sensitive, safeguards and crime scene information. Procedures should also specify reviews of proposed information releases by:
 - Security personnel (to ensure that no safeguards or security sensitive information is released).
 - Responding Federal, State and local law enforcement agencies (to ensure that released information does not compromise the crime investigation).

The development and use of pre-approved news statements or templates may help to avoid the inadvertent release of restricted information.

- C. The licensee should consider dispatching a public information liaison to the Incident Command Post (ICP) to gather facts for use in licensee news statements and briefings. The liaison should also coordinate the release of public information between the Incident Commander (or the designated Public Information Officer [PIO]), represented law enforcement agencies and the Joint Information Center (JIC).
- D. Provisions should be in place to facilitate communications between the ICP and Joint Information Center (JIC). This communications path(s), and expectations for its use, should be clearly defined and reviewed with offsite public information decision-makers. The designated communications equipment should be tested prior to the drill.
- E. ERO and ORO public information officials may wish to review the public information functions described in the National Response Framework (NRF) and the National Incident Management System (NIMS). These materials may be accessed on the FEMA website.

7 EP PROGRAM AND PROCEDURE ENHANCEMENTS

7.1 OPERATING EXPERIENCE AND GOOD PRACTICES

The following items are recommended EP program and procedure enhancements which will improve performance in responding to a hostile action. These enhancements were identified from a review of industry operating experience and observed good practices. Licensees are encouraged to consider each item and determine if program or procedure changes are warranted.

- A. Ensure that procedural instructions for the assessment and direction of protective measures for the onsite population are properly sequenced (i.e., supports rapid implementation of protective measures following detection or notification of a threat or attack).
- B. Develop pre-scripted post-attack and mobilization messages with instructions to the plant staff and ERO, and incorporate these into appropriate procedures. Consider the need for a periodically repeated message telling onsite personnel to remain in a protective posture (e.g., duck and cover) until other instruction is given. Procedures should list methods for delivering these messages plant public address system, text or email messages, pagers, local area announcements by a security officer, etc.
- C. Develop a method to ensure that the Shift Manager's post-attack priorities are communicated promptly to the Incident Commander.
- D. Ensure that notification procedures used to contact offsite first-responder agencies direct the caller to communicate not only the request for assistance but also the nature of the event. For example, a call to a fire department should include communicating that the reported fire is due to a Hostile Action.
- E. Procedures should contain general guidance on facilitating the movement of onsite personnel from "duck and cover" locations to ERO facilities, staging areas, and Protected Area and site egress points. Considerations should include coordinated decision-making needed to lift or modify initial protective actions, messaging to the onsite staff, movement coordination with Security and law enforcement, preferred travel routes, escorts, and check-in points.
- F. Verify that dosimetry and other site-specific radiation protection measures are, or can be made, available to offsite first-responders during the period when movement of the plant staff and ERO is restricted.
- G. Review standard emergency communications paths and protocols between and among licensee, State and local emergency response facilities. Consider how the HAB responses by law enforcement agencies and an ICP may impact these paths and

- protocols. Identify changes necessary to support timely and effective communications during and following a hostile action.
- H. Develop procedural or other guidance for dispatching licensee liaisons to the ICP to assist with overall response coordination, and to facilitate timely communications between the ICP, Security and key ERO decision-makers. The ICP liaisons should be knowledgeable in areas of site security, operations, radiation protection and public information. Liaisons should have access to supplies and equipment necessary to fulfill their function (e.g., stored at a designated location, available in a "go kit", etc.).
- I. Procedures should contain general guidance on facilitating the movement of ERO personnel from offsite locations (e.g., an alternative facility or staging area) to the site. Considerations should include movement coordination with security, the ICP and law enforcement, dispatch briefing and notification, preferred travel routes and arrival points, escorts, communications en route and upon arrival, credentialing, movement tracking and check-in points.
- J. Verify that appropriate procedures contain the information and instructions necessary to support activation and use the NRC Security Bridge telephone line; refer to Regulatory Issue Summary 2009-10, *Communications Between the NRC and Reactor Licensees During Emergencies and Significant Incidents*, for additional information.
- K. Verify that Security, Operations and ERO procedures support timely invocation of 10 CFR 50.54(x) and (y) when necessary (e.g., a security plan function cannot be maintained or must be suspended), and subsequent notification to the NRC.
- L. Assess procedural direction concerning the evacuation and relocation of security force and onsite/near-site first responders in the event of a radiological release. For example, procedures should provide guidance on moving security officers out of positions where they may be exposed to a radiological plume. Likewise, procedures should address communication of plume-related conditions that may affect first responders in the field (e.g., at a staging area) to the ICP along with a recommendation for evacuation or relocation of field personnel, if necessary.
- M. Procedures should contain general guidance on dispatching onsite and offsite monitoring teams following a hostile action. Considerations should include dispatch coordination with security, the ICP and law enforcement, dispatch briefing and notification, preferred travel routes and arrival points, escorts, communications en route and upon return, credentialing, and potential constraints on the availability of offsite monitoring vehicles or equipment (e.g., because the site cannot be accessed).
- N. There should be controls/reviews on the posting of information to shared display systems (e.g., WebEOC) to ensure that safeguards, security-sensitive or crime-related information is not made available to unauthorized personnel.
- O. Develop guidance to monitor Incident Command Post (ICP) habitability in the event of

- a radiological release. Guidance for relocating the ICP in response to a radiological release or a protective action decision may also be beneficial.
- P. Evaluate reasonable improvements that might be made to address a mass casualty event until the arrival of offsite emergency medical services.
- Q. Consider ERO/emergency response actions that could be impacted by implementation of the "two-person rule" and discuss potential impacts with Security; revise procedures as necessary.
- R. Review planned Protective Action Recommendations (PARs) with ORO officials and determine if changes are necessary to address offsite conditions that may be associated with a hostile action directed at the nuclear plant site.
- S. Develop general procedural guidance for the performance of personnel accountability in a post-attack environment. Guidance should address preferred timing or conditions for beginning accountability; coordinated decision-making and implementation by the ERO, security, ICP, LLEA, etc.; formulation of instructions to site personnel and methods of delivery; and differences in accountability performed following a land-based or waterborne attack and accountability implemented in response to an airborne threat/attack.
- T. Determine if changes are needed to the established process for planning and implementing ERO shift relief. In addition, assess capabilities for calling-in additional security officers and changing security shift schedules if necessary to support a protracted response.
- U. Procedures should contain guidance on contacting LLEA officials to determine crime scene boundaries and the need for ERO personnel to minimize the disturbance of the site area(s) designated as a crime scene.

8 TRAINING ENHANCEMENTS

8.1 OPERATING EXPERIENCE AND GOOD PRACTICES

The following items are recommended training enhancements which will lead to improved performance by personnel responding to a hostile action. These enhancements were identified from a review of industry operating experience and observed good practices. Licensees are encouraged to consider each item and determine if training program or content changes are warranted.

- A. Train key Operations, Security and ERO personnel on the significant differences between responding to a non-security emergency event and a hostile action. Suggested topics include:
 - Prompt communication of threat or attack information between the Control Room and Security is critical to an effective response.
 - The need for rapid assessment and direction of protective measures for the site population.
 - A hostile action will require the Shift Manager and other members of the ERO to take or direct actions that may not be frequently performed, while under significant time pressure.
 - During a land-based or waterborne attack, the Shift Manager must balance the responsibility for Control Room oversight with the need to maintain frequent communications with Security.
 - Requirements associated with NRC notifications and communications during a hostile action (e.g., refer to NRC RIS 2009-10).
 - Understanding the process for requesting and receiving approval to dispatch onshift personnel in a post-attack environment.
 - Understanding the process for mobilizing the ERO in a post-attack environment.
 - Conditions during a hostile action may lead a State to implement offsite protective actions that differ (perhaps substantially) from the licensee's protective action recommendation.
 - The need to minimize the disturbance of the site area(s) designated as a crime scene.
- B. Train ERO personnel that calls to offsite first-responder agencies should communicate enough information that agency personnel can fully understand the nature of the event.

For example, a call to a fire department includes communicating that the reported fire is due to a Hostile Action.

- C. Personnel from offsite first-responder agencies (e.g., law enforcement, firefighting, ambulance service, etc.) should be familiarized on protocols for responding to a hostile action. Consider topics such as site layout, staging areas, travel routes, preferred Incident Command Post (ICP) location(s), credentialing, communications, radiation protection and dosimetry, roles of the Shift Manager and on-shift security supervision, etc.
- D. Consider inviting representatives from OROs, LLEAs, and local firefighting agencies to observe and/or participate in a simulator scenario based on a hostile action. Additionally, the training value of periodic HAB simulator scenarios is enhanced by the participation of a security shift supervisor.
- E. Consider requesting NRC headquarters participation during a HAB simulator scenario (e.g., one presented during licensed operator re-qualification training). The learning from this participation is particularly effective when practicing responses to an airborne threat. Drill activities could include the use of authentication codes and open communications with the NRC HOO regarding the status of the postulated threat.
- F. Lead ERO facility managers, and ICP liaisons, should be broadly familiar with the concepts and principles of the National Incident Management System (NIMS) and the Incident Command System (ICS), as practiced by their State and local authorities. Information and training materials on NIMS and ICS may be accessed on the FEMA website.
- G. Review activation and operation of ERO staging areas and/or alternative facilities.
- H. Train ERO personnel on implementation of the "two-person rule."
- I. Train appropriate Security and ERO personnel on the use of procedures for invoking 10 CFR 50.54(x) and (y), and the requirements for subsequent notification to the NRC (e.g., a Security Plan function cannot be maintained or must be suspended).

¹¹ This is not to suggest that NIMS/ICS training be required for any ERO member.

9 REFERENCES

- 1. RIS 2002-12a, Power Reactors NRC Threat Advisory and Protective Measures System
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- 4. RIS 2004-15, Emergency Preparedness Issues: Post 9/11
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- 8. RIS 2007-02, Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events
- 9. RIS 2008-22, Notification Of Licensees Regarding Aircraft Threats
- 10. RIS 2008-26, Clarified Requirements of Title 10 of the Code of Federal Regulations (10 CFR) Section 50.54(Y) when Implementing 10 CFR Section 50.54(X) to Depart from a License Condition or Technical Specification
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- 15. Regulatory Guide 1.214, Response Strategies for Potential Aircraft Threats
- 16. NRC Inspection Procedure 71114.07, Exercise Evaluation Hostile Action (HA) Event
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APPENDIX A - RECOMMENDED DRILL AND EXERCISE OBJECTIVES

	Recommended Objective	Performance Attributes
1.	Demonstrate the ability to implement the emergency plan during a hostile action-based event.	 Timely implementation of: emergency classification. the formulation of Protective Action Recommendations (PARs). Offsite Response Organization (ORO) notifications.
2.	Demonstrate the ability to make initial notifications to law enforcement and other first-responder agencies during a hostile action-based event.	Timely notifications are made to law enforcement, fire, medical and other first-responder agencies as specified by appropriate procedures. [Notification made to actual or simulated agency contact points.]
3.	Demonstrate the ability to communicate threat-related information to the NRC during a hostile action-based event.	 Perform accelerated notification to the NRC in accordance with appropriate procedures. [Notification made to actual or simulated NRC for a land or waterborne attack scenario.] Perform airborne threat communications with the NRC in accordance with appropriate procedures. [Communications with actual or simulated NRC for airborne attack scenario.]
4.	Demonstrate the ability of on-shift Operations and Security personnel to coordinate response actions among themselves, and with the Incident Commander and local law enforcement agency (LLEA) personnel.	 Discussion, decision-making and communication related to: threat type, location, progression and changes to protective strategies. protective measure instructions to on-site personnel [communication may be simulated]. entry, control, coordination and deployment of LLEA resources. radios or other methods used to facilitate communications between licensee and law enforcement personnel. understanding plant status and damage, personnel casualties and response priorities.
5.	Demonstrate the ability of on-shift Operations and Security personnel to coordinate with the Incident Commander	Discussion, decision-making and communication related to:

	Recommended Objective	Performance Attributes
	for deployment of on-site and offsite first-responders in a post-attack environment.	• deployment of offsite first-responder personnel and vehicles to staging areas (e.g., fire trucks, ambulances, etc.).
		 radios or other methods used to facilitate communications between licensee and offsite first-responder personnel.
		 determination of on-site response locations and priorities.
		 rapid deployment of offsite first-responder personnel and vehicles to on-site response locations while maintaining control of site and Protected Area access.
		 implementation of initial accident mitigation actions prior to ERO mobilization, including movement of on- shift personnel to perform critical tasks.
6.	Demonstrate the ability to coordinate implementation of on-site radiation protection measures for offsite first-responders with the ICP.	Discuss, simulate and/or implement radiation protection measures for offsite first-responders reporting to the site, as appropriate to the scenario (e.g., dosimetry, KI, respiratory protection, etc.).
7.	Demonstrate the ability of the Emergency Response Organization (ERO) to support operation of an Incident Command Post (ICP).	Discussion, decision-making and communication related to:
		 support activation of an ICP.
		 accessibility by offsite responders.
		 dispatch of licensee personnel to the ICP to serve as liaisons to ERO facilities, and to advise on matters related to plant operations, radiation protection, and Security.
		 availability of site and plant layouts, and other aids that the ICP staff might need to effectively coordinate law enforcement, fire and medical responses.
		• coordination with field responders.
8.	Demonstrate the ability to coordinate mobilization of the Emergency Response Organization (ERO) with Security and the ICP.	Discussion, decision-making and communication related to:
		 confirmation that the known threat has been neutralized to the extent necessary to allow ERO mobilization (land or waterborne attack).

Recommended Objective	Performance Attributes
	 selection of a method(s) to protect ERO members during movement and provide safe passage (e.g., use designated routes, armed escorts, vehicles, etc.).
	 mobilization instructions provided to responders (e.g., routes, escorts and exclusion areas; proceed directly to facilities; do not detour to inspect damage, etc.)
	 allowing ERO members to exit the site and proceed to their assigned emergency response facilities (e.g., the EOF or JIC).
	• on-going protection of emergency response facilities and staff.
9. Demonstrate the ability of the Emergency Response Organization (ERO) to coordinate in-plant and on-site response actions with Security and the Incident	• Effective interface between the ERO emergency director, Security supervision and the Incident Commander is maintained as conditions change.
Command Post (ICP).	 Plant status is determined, and mitigative actions are planned and prioritized.
	 Alignment on priorities and assignment of resources.
	 Coordination and communications supporting timely movement of ERO personnel to perform on-site and in-plant response actions in a post-attack environment (e.g., dispatching an OSC repair or survey team).
	• ERO personnel adhere to movement and other restrictions imposed by Security and law enforcement decision-makers, (e.g., stay clear of perimeter zones, definition of free movement areas, special identification, two-person line-of-sight rule, use of escorts, etc.).
	 ERO Liaisons at the ICP are provided with information and updates in a timely manner.
	 As determined by law enforcement personnel, coordination and communication of actions to preserve a crime scene.

Recommended Objective	Performance Attributes
10. Demonstrate the ability of the ERO to activate alternative facilities (if required by the scenario).	Determine if activation of alternative facilities is necessary based on the event conditions, and communicate this decision to ERO members.
	 Personnel at these locations are able to communicate with the Emergency Operations Facility, Control Room, and Security.
	 Personnel at these locations can make ORO notifications if required by emergency plan implementing procedures.
	 Personnel at these locations are able to perform engineering assessment activities, including damage control team planning and preparation.
11. As appropriate to the scenario, coordinate deployment of fire and medical response resources between the ICP, on-site ERO facilities, and Security.	• Decision-making and coordination support timely deployment of firefighting and medical responders to appropriate site and plant areas. [Consider limited deployment of actual resources to support this demonstration.]
12. Demonstrate the ability to account for onsite personnel in a post-attack environment.	 Discussion of strategies for conducting accountability of on-site personnel in a post-attack environment, including any associated movement (e.g., assembly and release). Accountability within ERO facilities,
	including team deployments, is maintained consistent with Security and law enforcement requirements.
3. Demonstrate the ability to perform an assessment of offsite radiological	 Perform offsite dose projections as appropriate to the scenario events.
consequences as appropriate to the scenario	• Develop dose-based PARs as necessary.
events.	• Consider the impact of a release on the ICP and first-responder staging areas.

Recommended Objective	Performance Attributes
14. Demonstrate the ability of the ERO to coordinate the development and release of public information in a post-attack environment.	• Integrate public information officials from participating Federal, State and local law enforcement agencies, and first-responder agencies, into JIC operations.
	• Public information releases are vetted for sensitive and safeguards information prior to issuance.

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APPENDIX B - PRE-DRILL TABLETOP GUIDELINES

A tabletop provides a facilitated learning environment for key ERO and ORO personnel to review and discuss their respective roles and responsibilities. In particular, it permits the various organizations to gain an understanding of each other's needs and priorities when responding to a hostile action. For example, these drills can provide offsite first-responders with a perspective on the plant operating crew's immediate concerns with restoration of equipment important to safety and the need for ERO assistance. Likewise, the plant staff will gain an appreciation for law enforcement requirements and the operational aspects of the National Incident Management System (NIMS). Therefore, it is important that the structure and conduct of the tabletop encourage a free exchange of viewpoints and concerns among the participants.

The tabletop scenario may use the same type of attack event (i.e., land-based, waterborne or airborne) as that used for the subsequent HAB drill; however, the following constraints apply to Tabletop scenario.

- If performance in the subsequent HAB drill will contribute to the ERO Participation Performance Indicator, then the details of tabletop scenario attack sequence must be sufficiently different from the drill scenario (i.e., the drill scenario will present a valid performance enhancing opportunity as described in NEI 99-02). For example, vary the attack direction, number of attackers, attack timeline, damage and casualties, offsite consequences, etc.
- If performance in the subsequent HAB drill will not contribute to the ERO Participation Performance Indicator, then the tabletop scenario may be the same as the drill scenario.
- Exercise scenarios must always be sufficiently different from either or both the preceding tabletop(s) and/or drill(s).

A tabletop facilitator(s) will use a scenario to lead participants through a series of postulated attack and post-attack events, pausing after each event to elicit discussion from the participating decision-makers in a logical sequence. For example, after presentation of the initial attack event, site security would explain its responses (but not tactical, safeguards-related actions). The facilitator will then seek input from, in order, the operating crew, offsite first-responders, site ERO personnel and finally ORO personnel.

Details concerning implementation of a tabletop are presented below.

I. DISCUSSION TOPICS

The overarching objective of the pre-drill tabletop is for the participants to achieve mutual understanding of each organization's roles, responsibilities, priorities and actions when responding to a hostile action. This understanding should contribute to a successful integrated response during the HAB drill. The drill manager should consider the following topics for inclusion in the tabletop agenda.

- Method(s) used by the licensee to notify offsite first responders of a threat and/or attack. Method(s) for subsequent dissemination of this information among offsite response organizations
- 2. Initial site security actions in response to the event (but not tactical, safeguards-related actions)
- 3. The operating crew's actions per HAB-response operating procedures and procedures for implementing the emergency plan
- 4. Initial offsite first-responder actions upon notification:
 - site access requirements for offsite first-responders
 - staging and/or reporting location(s) of offsite first-responders
 - communications and coordination with Incident Commander, Shift Manager, and site security
- 5. Establishment of the Incident Command Post (ICP):
 - who is in charge of the overall response, and how transitions in command and control would take place as the scenario evolves?
 - key support personnel reporting to the ICP and their respective functions
 - how offsite first responders obtain turnover from, and integrate with, the site response?
 - how will Incident Commander communicate and coordinate with ORO decisionmakers
- 6. Radiation protection provisions for offsite first-responders to the site
- 7. Primary and backup means of communications between and among the operating crew, site security, offsite first-responders in the field and the ICP
- 8. Coordination and decision-making related to:

- Ensuring that the ICP understands operational priorities for restoration of damaged plant equipment, and application of firefighting and medical response resources
- Prompt post-attack movement of on-shift personnel to support plant stabilization, implementation of coping strategies and/or cooldown
- Protective action decisions for the public
- Mobilization of the ERO and activation of ERO facilities
 - ensuring the safety of ERO personnel while in transit to their emergency facilities
 - method and messages to notify ERO personnel of ERO activation
 - mustering locations of site ERO personnel and alternative facilities that will be utilized, if any
 - credentials required for ERO personnel returning to the site to pass through offsite law enforcement access controls
 - Dispatch of onsite and offsite monitoring teams
- 9. Management of the onsite emergency medical response to triage, treat and transport injured or wounded personnel, and utilization of offsite medical resources
- 10. Informational requirements for making protective action decisions (PADs). Also discuss how PADs during a hostile action may differ from PADs resulting from a non-security event.
- 11. Development, approval and release of event information to the media
- 12. Crime scene preservation.

II. PREPARATION

Representatives from offsite stakeholder organizations, particularly the first-responder organizations, should be involved in the planning for the tabletop. The offsite official who will serve as the Incident Commander should have a role in such preparation activities as selecting participants, establishing discussion topics and objectives, designing the scenario, arranging the room layout and deciding who will facilitate. The following tabletop planning elements should be jointly determined.

• Date, time and location.

- Individuals from the site ERO and key offsite response organizations that will be invited to participate.
- Method(s) and responsibilities for inviting identified participants.

Develop a relatively simple, straightforward scenario that postulates an attack on the plant and consequences that require a range of offsite resources. Review the scenario with representatives of key offsite response organizations to ensure that it promotes the desired range of offsite participation.

Conduct meetings with selected onsite and offsite participants to review the tabletop scenario and timeline, and to solicit their suggestions for conducting the tabletop. Suggested outcomes from this activity are:

- given the scenario, determine what the agencies perceive as their role and extent-ofplay
- determine what the agencies want to learn from the tabletop as a guide for the facilitator
- determine which agencies will have a lead role at different stages of the timeline
- provide the agencies' the opportunity to think about their individual extents-of-play as the tabletop scenario evolves and how the command structure may change
- establish ownership of offsite participants in their respective roles in the tabletop

Determine if the tabletop will use one or more than one facilitator. This decision should be based on what arrangement will promote maximum participation and information sharing. If more than one facilitator will be used, specify who will serve as the lead facilitator and define expected roles.

Determine the room layout for the tabletop; an example tabletop layout is presented in Figure B1. Thought should be given to locating the various organizations in the room to achieve maximum interaction and communication among the participants. For example, the Incident Commander and other first response organizations will be located together at one table to represent the ICP and other NIMS command structure entities. The room arrangement should facilitate communication between this location and initial onsite response personnel (i.e., site security and the control room). Licensee liaison personnel should be located at the ICP table to facilitate communication and understanding of plant information.

Setup the tabletop area prior to the participants' arrival. Each table should have a sign, readable by all participants, that identifies the represented organization. A name and position placard should identify individual participants.

Observers and other non-participants should be located in peripheral areas of the room so as

not to interfere with participant interaction. A nearby break-out location may be designated for security personnel in the event safeguard discussions become necessary.

Depending on the size of the room and how far participants are situated from one another, a sound system and microphones may be necessary.

III. CONDUCT

Each participant should be provided with a diagram of the tabletop room layout that identifies the participating organizations. They should also be provided a list of all participants, their emergency response titles and the organizations they represent.

Designate a non-participant to take notes of the discussion, and record key points and "parking lot" issues.

Messages with critical information that would be known only to a particular group of responders (e.g., those in Control Room) should be provided directly to those participants, as opposed to announcing the information or placing it on a projection system. This approach will drive communications between various tabletop participants and help identify potential gaps in information flowpaths.

The lead facilitator should have the participants introduce themselves - participants should state their name, organization, emergency position and a brief statement of their emergency role. The lead facilitator should caution participants to avoid discussion of safeguards information; however, accommodations can be made for review of this material by appropriate officials if necessary.

The lead facilitator initiates the scenario by stating the initiating conditions and events, and soliciting expected response actions from site personnel. This segment would include the process of threat identification and initial notifications to onsite personnel and offsite first-responders. A short break may follow this segment to allow the notified organizations to review their response actions (at their respective tables) and prepare to present them to all tabletop participants.

The facilitator(s) advances the timeline of the scenario segment by segment, soliciting response actions of each participating organization and emergency response function.

As necessary, the facilitator(s) should prompt discussion ¹² concerning:

- Information requirements of each organization and how communications will occur among emergency response facilities and organizations.
- Post-attack coordination necessary to allow movement of on-shift personnel and

¹² NEI maintains a list of sample facilitative questions for use in conducting HAB tabletops. This list may be obtained by contacting a member of the NEI EP staff.

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deployment of offsite response assets.

- Post-attack mobilization of the ERO prerequisite conditions, methods to facilitate, communications and coordination, etc.
- Transition of licensee's command and control structure, and how this transition is communicated to the offsite responders.
- Coordination between the site ERO and the ICP.

IV. CRITIQUE AND FOLLOW-UP

At the conclusion of the tabletop, the lead facilitator should request that each table conduct its own critique, and identify a summary of lessons learned and any items requiring further review and/or corrective action. In particular, participants should be asked to focus on issues that may have impeded an effective, integrated response. Allow approximately 15 minutes for this activity.

The lead facilitator should then ask the lead individual from each table to present the critique results to all tabletop participants. The designated note taker should record critique items and issues on a display visible to everyone. After presentation of each table's critique, observations should be solicited from any observers.

Issues requiring further evaluation or action should be entered into an appropriate tracking mechanism (e.g., a corrective action program). The EP Manager should consider issuing a tabletop report or summary document to the participants, and a method to communicate resolution of critical issues to the appropriate decision-makers prior to the HAB drill.

FIGURE B-1
Example Tabletop Layout

