

DHS/FEMA



**Radiological Emergency Preparedness
Program Hostile Action-Based
Emergency Planning Drill
Best Practices Report**



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Purpose

To ensure that “best practices” from the Task Force observation of hostile action-based (HAB) Emergency Preparedness (EP) drills are captured and shared with all Federal Emergency Management Agency (FEMA) Radiological Emergency Preparedness (REP) Program staff and disseminated through the Lessons Learned Information Sharing (LLIS.gov) portal, ICF has reviewed the Task Force HAB Drill observations reports to identify, organize, and compile a “Best Practices” report to be shared on the LLIS portal.

Joint FEMA/NRC Exercise Scenario Enhancement Task Force Background

In 2007, the U.S. nuclear industry undertook the voluntary Phase III/HAB EP Drill initiative in response to security-related REP program enhancements described in Nuclear Regulatory Commission (NRC) Bulletin 2005-02, which outlined the proposed incorporation of HAB scenarios, at some frequency, into the biennial exercise cycle. These drills were conducted under a framework developed by the Nuclear Energy Institute (NEI) 06-04, Rev. 1, which was endorsed for use by the NRC for use only in this industry volunteer drill initiative.

In December 2007, FEMA and the NRC chartered a joint FEMA/NRC Exercise Scenario Enhancement Task Force in response to a NRC Commission Staff Requirements Memorandum. The Task Force was tasked to identify recommendations for changes to FEMA and NRC regulations and guidance to enhance challenging aspects of REP scenarios to reduce the preconditioning of exercise participants and perceived negative training aspects. A key element of the Task Force’s research and activities was the proposed introduction of HAB scenarios into the REP exercise cycle. Actual changes to regulations/guidance was performed under a separate NRC/FEMA Rulemaking Working Group.

In addition to other data collection efforts, the Task Force observed six HAB EP Drills to validate proposed changes incorporating hostile action event response into the REP Program Manual. The drills observed were:

- Byron Generating Station, February 27, 2008
- San Onofre Nuclear Generating Station (SONGS), May 7, 2008
- Calvert Cliffs Nuclear Power Plant, July 15, 2008
- Grand Gulf Nuclear Station, November 11, 2008
- St. Lucie Nuclear Power Plant, March 11, 2009
- Millstone Nuclear Power Station, May 15, 2009

HAB EP Drill Observation Methodology

During each observed drill, the Task Force provided observers at key locations to consider whether the proposed changes to the REP Program Manual were appropriate; observable during an exercise; and worded clearly enough so that, should the proposed changes be adopted, they could become part of the evaluation criteria in future exercises. Following each observed HAB EP Drill, the Task Force reviewed and refined its proposed changes to the REP Program Manual and noted any associated implementation challenges.

Observation Trends

The following section of the report presents observations and trends observed by the Task Force during HAB EP Drills in three areas: 1) scenarios, 2) changes to the REP Program Manual, and 3) implementation challenges. At no time was the performance of the individuals and organizations participating in the drills evaluated by the Task Force Observers.

Scenarios

Scenario Elements

The scenarios used during HAB Drills observed by the Task Force all involved significant damage occurring to the Nuclear Power Plant (NPP). In many instances, the damage was caused by airborne or waterborne attacks on the protected area. Response efforts to address the physical damage to the NPP were hampered in most instances by hostile forces and/or sabotage, which resulted in restrictions on and close monitoring of the movement of onsite and offsite personnel to ensure their safety. Table 1 below summarizes these scenario elements.

During all of the observed drills, the active involvement of local offsite response organizations (OROs) was limited to providing fire, emergency medical services (EMS), and local law enforcement in support of initial onsite accident assessment/mitigation and license response organization mobilization. In some cases special weapons and tactics (SWAT) team response was also demonstrated. ORO emergency operations centers (EOCs) were notified of the incident at the NPP, but had limited involvement; the bulk of response activity occurred onsite and was coordinated onsite. In all but one of the observed drills, the hostile force activity was limited to onsite and was concluded quickly. The mid- to long-term effects of the damage to the NPP (e.g. radiological contamination) were beyond the scope of the HAB EP drills. However, during these drills the site was postulated to be in a locked down status until status of adversaries could be confirmed and limited onsite movement coordinated with local law enforcement agencies (LLEA) at the Incident Command Post (ICP). Significant coordination of activities between licensee Control Room/Security force and initial ORO responders to site took place during each drill.

Table 1: Summary of Scenario Elements

Nuclear Power Station	Airborne/ Waterborne	Hostile Forces Onsite	Sabotage	HAB Events in the Community
Byron	✓	✓		
SONGS	✓			
Grand Gulf	✓		✓	
Calvert Cliffs		✓	✓	
Millstone	✓	✓		✓
St. Lucie		✓		

Analysis of Scenario Elements

The opportunity for OROs and licensee personnel to explore if and how traditional REP protective action recommendations (PARs) and protective action decisions (PADs) would need to be modified to protect public health and safety. Further, the opportunity for ORO resources to provide surge support to onsite law enforcement operations was limited, due to the quick and definitive containment of the hostile forces. In majority of drills, the inconsistency between licensee PAR and ORO PAD, as well as coordination between ICP and EOCs, were identified as key lessons-learned.

The inclusion of ORO resources onsite for fire suppression, EMS, and law enforcement support for initial licensee accident assessment/mitigation activities and license response organization mobilization was the scenario element that enabled the greatest learning opportunities for both onsite and offsite personnel. However, Task Force Observers noted that there were several instances where ORO response was delayed due to a lack of clarity in onsite and/or ORO plans and procedures on how the ORO resources were to be integrated into the onsite command structure and for equipping ORO personnel with dosimetry and potassium iodide with site in a lockdown status. Nevertheless, both onsite and offsite personnel were ultimately able to come to an understanding through ICP on how to proceed to effectively respond to the HAB scenario.

Changes to REP Program Manual

Task Force Observers identified many instances where the language the Task Force had initially proposed for revisions to the REP Program Manual needed to be adjusted to ensure uniform interpretation if used during an evaluated REP exercise. The Task Force went through many iterations of the draft language to ensure that the focus of the evaluation of new concepts (e.g., the National Incident Management System (NIMS) and HAB scenarios) was on whether or not they were effectively incorporated into response planning and coordination. The Task Force stringently avoided incorporating any language that might lead to “second-guessing” tactical decision-making, since the structure of NIMS is infinitely flexible and the response to a hostile action event may take many forms.

In many cases, examples were added to the proposed language to provide the range of locations and/or activities that evaluators should consider. Care was taken to emphasize that the examples provided represented the breadth of what should be considered, but that participants/evaluators were not required to demonstrate/review every example provided.

Only those evaluation area sub-elements where changes were made as a result of Task Force Observer activities at HAB EP drills are discussed below.

Evaluation Area 1: Emergency Operations Management

The introduction of HAB scenarios to the REP Program adds an additional decision-making entity, the Incident Command/Unified Command (IC/UC), which must be incorporated into emergency operations management. In modifying Evaluation Area 1, the Task Force took great care to use generic language consistent with NIMS to permit the OROs maximum flexibility to determine how the jurisdiction (and an IC/UC) will

apply the NIMS modular and scalable response framework to a REP scenario. Many specific examples were provided to assist exercise planners, participants, and evaluators in focusing on the additional coordination required to respond to a hostile action event, rather than on the specific tactics that the IC/UC might employ to address a dynamic situation.

Sub-element 1.a – Mobilization

The Task Force refined the proposed language to ensure that the focus of a REP evaluation would be on the coordination of mobilization and activation of resources, rather than the how these activities were accomplished. Examples were added to further emphasize that evaluation should focus on deliberate consideration and coordination of resource allocation between response to a hostile action event and traditional REP functions.

Sub-element 1.b – Facilities

Based on Task Force observations, the inclusion of mobile facilities (e.g., Incident Command Posts) within this sub-element was not appropriate because the possible locations and configurations of such a “mobile facility” are infinite and situationally dependent. The Task Force removed its recommendation that mobile facilities be included in this sub-element.

Sub-element 1.c – Direction and Control

The Task Force significantly modified its recommended changes to this sub-element as a result of HAB EP drill observations to generically embrace the ability to carry out the essential management functions of the response efforts rather than call out specific portions of the Incident Command System (ICS). The variations observed in how NIMS was implemented among OROs and onsite responders underscored the need to keep this sub-element focused on leadership, because ICS implementation is situation dependent.

Sub-element 1.d – Communications Equipment

To avoid confusion, the Task Force streamlined their proposed changes to this sub-element to embrace all facilities, field monitoring teams (FMTs), and incident command, rather than call out individually each location that may be involved in a hostile action event response.

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

The Task Force observed confusion during the HAB EP drills over provision of dosimetry and KI to ORO and/or specialized response teams responding to the NPP while the site was in a lockdown status. Based on these observations, the proposed language was modified to require that OROs negotiate in advance with licensees and document in their offsite plans and procedures responsibility for providing dosimetry and KI.

Evaluation Area 2: Protective Action Decision-making

The Task Force observed confusion regarding how the unique aspects of a HAB scenario should be incorporated into PAR/PAD making. In modifying Evaluation Area 2, the Task Force updated language in the REP Program Manual to require that consideration of

the unique aspects of hostile action events be incorporated into offsite planning and procedures for PAR/PAD making. Proposed revision to Supplement 3 to NUREG-0654/FEMA-REP-1 being initiated by NRC would also provide additional guidance on licensee coordination of PARs with OROs for hostile action events.

Sub-element 2.a – Emergency Worker Exposure Control

Task Force observers noted some confusion over who was responsible for exposure control for ORO responders dispatched to the NPP while the site was in a lockdown status. As a result, proposed Task Force revisions to the REP Program Manual were modified to require that offsite plans and procedures be coordinated with licensee to address issuance and use of KI and dosimetry for emergency workers dispatched onsite to support incident assessment and mitigation actions during a hostile action event.

Sub-element 2.b – Dose Assessments and PARs and PADs for the Emergency Event

Task Force observations in this area centered on clarifying guidance to ensure that licensee and ORO personnel authorized to issue PARs and PADs consider the unique aspects of hostile action events and seek input from the IC/UC. Specific language was incorporated to emphasize that a hostile action event may pose undue risk to an evacuation in the potential zone of violent criminal activity or an evacuation may disrupt response efforts. As a result, licensee and ORO decision makers may need to consider alternate PARs/PADs.

Sub-element 2.c: PAD Consideration for the Protection of Special Populations

Task Force observers emphasized the need to incorporate input from the IC/UC into the PAR/PAD-making process for Special Populations. Proposed Task Force revisions to the REP Program Manual included requiring coordination with IC/UC prior to issuance of a PAD for Special Populations.

Evaluation Area 3 – Protective Action Implementation

The Task Force observed confusion regarding how the unique aspects of a HAB scenario should be incorporated into protective action implementation. In modifying Evaluation Area 3, the Task Force updated language in the REP Program Manual to ensure that response activities for a hostile action event are taken into account when implementing protective actions.

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

Task Force members observed confusion over who would provide Emergency Worker Exposure Control for ORO and Supplemental Resources being deployed to the NPP while the site was in a lockdown status. Specific language was added to the RPM that allowed for just-in-time training for Supplemental Resources (if used), to ensure basic knowledge of radiation control.

Sub-element 3.d: Implementation of Traffic and Access Control

Task Force observers noted confusion and concern over how access to affected offsite areas would be controlled during a hostile action event. As a result, the proposed language was modified to require traffic and access control staff to demonstrate their

actual roles and responsibilities, including verifying emergency worker identification and access authorization to affected areas, as per the extent of play agreement.

A further change to this sub-element highlighted the need to ensure that evacuation planning included consideration of the affect of response efforts on evacuation, since response efforts for a hostile action event themselves may become an impediment to an evacuation.

Evaluation Area 4 – Field Measurement and Analysis

Task Force Observers noted that HAB events place additional risk on field monitoring team activities. Proposed language was revised to ensure that incident command was incorporated into the decision-making process used to coordinate where and when field monitoring teams would be deployed during a hostile event.

Evaluation Area 5 – Emergency Notification and Public Information

Task Force Observers noted inconsistencies in the type of information released about a hostile action event and in how, when, and by whom the information was released to the public. The clearing process for information to be released also varied considerably. The Task Force deferred to onsite and offsite plans and procedures, but proposed language in REP Program Manual that the release of information related to a hostile action event be coordinated with appropriate authorities, including law enforcement.

Implementation Challenges

Policy

Based on NEI 06-04, Rev. 1, licensees and OROs conducted HAB EP drills on a volunteer basis to demonstrate a response to the unique challenges posed by hostile action events. These drills have stimulated significant coordination and awareness between sites and OROs, and have resulted in discussions and planning to resolve HAB-related issues. Industry, Federal, State, and local stakeholders await the final publication of the Draft EP Regulations and Guidance for clarification on the following critical issues:

- Required frequency of incorporation of HAB scenarios into biennial exercises;
- Specific HAB scenario variation requirements, if any;
- Revisions to exercise evaluation criteria to address HAB scenario-specific circumstances (e.g., release of public information during or following a HAB event).

Plan Update and Review

As noted in the *Analysis of Scenario Elements* section, confusion and delays occurred in drill play as the result of a general lack of clear understanding between onsite and offsite organizations/ players about specific roles and responsibilities for response to a hostile action event at an NPP. As such, integration of onsite and offsite resources into an IC/UC to ensure the timely performance of required actions was a challenge for all involved.

For each NPP, key licensee and ORO personnel should meet to discuss and align on roles and responsibilities for an hostile action event under IC/UC concepts. Agreed upon roles and responsibilities for responding to a HAB event would then need to be integrated into respective REP plans and procedures based on implementation of final EP rulemaking and guidance revisions.

To ensure consistency across FEMA regions, FEMA HQ would need to provide State and local stakeholders with clear guidance outlining requirements for updating and reviewing ORO emergency response plans.

Training

Once radiological emergency response plans and procedures have been updated to account for the unique challenges of HAB events based on implementation of proposed EP rulemaking and associated draft guidance, these plans and procedures will need to be disseminated to appropriate parties and appropriate training provided.

ORO staff have voiced concern on multiple occasions, both at HAB EP drills and various stakeholder meetings, regarding the funding source for this additional training. FEMA will need to work with stakeholders to address this issue.

Evaluation

To ensure uniform evaluation of incident command, evaluation needs to focus on communication and coordination with other response entities, rather than on specific tactical decisions (e.g., how the ICS is structured for a particular incident, allocation of resources). Although REP evaluators will need to have familiarity with incident command to ensure that the appropriate parties are communicating and coordinating, it may not be necessary for an evaluator to fully understand EP response activities to a hostile action event

Administration

Licensee and ORO personnel voiced concern during post-drill hot-washes about the need for adequate time to effectively address new regulations and guidance for proposed HAB scenario-driven exercises. Specifically, they identified the criticality of having sufficient time to incorporate these requirements into their plans, train all appropriate staff, and conduct non-graded drills or dress rehearsals based upon the new regulations and guidance, in advance of the first evaluated exercise.

Summary

Task Force HAB EP drill observations provided critical insight for efforts to identify proposed solutions to issues associated with the integration of HAB scenarios into the REP Program. The Task Force submitted recommendations for changes to the REP Program, which were weighed against other changes proposed by the REP Program Manual Working. FEMA published the resulting language in the Draft REP Program Manual on May 18, 2009 for public review and comment. Following the public comment period, FEMA and the NRC will work to adjudicate all public comments on their respective agency's guidance and rulemaking documents.