



Homeland Defense & Security
Information Analysis Center



After-Action Review (AAR)

2023 Mixed-Hazardous Waste Consequence Management Event | Real-Time Tabletop Exercise

Completed (July, 2023)

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14. ABSTRACT In June of 2023, HDIAC convened a Tabletop Exercise (TTX) in Oak Ridge, Tennessee, which posited a mixed-hazardous waste "dirty bomb" that blankets the nearby federal reservation and its research facilities in a harmful chemical plume. With more than 50 participants in attendance representing 20+ city, state, federal civilian and military organizations, the TTX grappled with critical questions of emergency response planning, cross-jurisdiction mutual aid, how best to detect and report on hazards, and triaged PPE use. This after-action report will discuss the motivation behind the scenario chosen, and present lessons learned from the exercise.					
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The Homeland Defense & Security Information Analysis Center (HDIAC) is a DoD IAC sponsored by DTIC to provide expertise in eight technical focus areas: alternative energy; biometrics; chemical, biological, radiological, nuclear, and explosives (CBRNE) defense; critical infrastructure protection; cultural studies; homeland defense & security; medical; and weapons of mass destruction. HDIAC is operated by SURVICE Engineering Company under contract FA8075-21-D-0001.

Abstract

In June of 2023, HDIAC convened a Tabletop Exercise (TTX) in Oak Ridge, Tennessee, which posited a mixed-hazardous waste "dirty bomb" that blankets the nearby federal reservation and its research facilities in a harmful chemical plume. With more than 50 participants in attendance representing 20+ city, state, federal civilian and military organizations, the TTX grappled with critical questions of emergency response planning, cross-jurisdiction mutual aid, how best to detect and report on hazards, and triaged PPE use. This after-action report will discuss the motivation behind the scenario chosen, and present lessons learned from the exercise.

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1.0 Background

In mid-2022, the U.S. Department of Defense (DoD) tasked the Homeland Defense & Security Information Analysis Center (HDIAC) to design, develop, and execute a tabletop exercise (TTX) to help inform the domestic emergency response community in consequence management (CM) procedures. This exercise was conducted at the Oak Ridge Associated Universities (ORAU) Pollard Technology Conference Center in Oak Ridge, Tennessee, June 13–15, 2023.

The TTX scenario posited the deliberate explosion of a mixed-hazardous waste (MHW) device (or “dirty bomb”) near a key electrical infrastructure node in East Tennessee. The follow-on burning of the MHW source material—supplemented by a large volume of combustible materials—released hazardous levels of radionuclides and other unknown dangerous chemicals into the environment, threatening to contaminate numerous commercial and residential locations. Prevailing winds then transported the MHW plume toward key national security sites on the federal Oak Ridge Reservation (ORR).

The explosion and resultant fire triggered a significant governmental response, with authorities declaring a major disaster and multiple state, local, county, and federal assets responding. The TTX began shortly after *hour 0*, as information began to trickle in from front-line responders regarding the nature of the device and the scope of the damage. An unannounced gameplay “inject” further posited a major cyberattack against critical infrastructure in the area, targeting communications and electrical control devices, and with ransomware crippling local hospital capabilities.

In May 2023, participants received a twenty-page “Read-Ahead Packet” containing a detailed description of the TTX scenario, a discussion of the event’s training objectives, and a participation “template” designed to help attendees research and document their organizations’ CM policies and procedures in advance of the exercise.

In advance of the TTX gameplay, participants also received informational briefings from several Subject Matter Experts (SMEs) in the CM field on the first day of the event. These included presentations by the J39 Weapons of Mass Destruction–Civil Support Team (WMD-CST) of the National Guard Bureau; the Radiation Emergency Response Team (RERT) of the Environmental Protection Agency; and the United States Attorney’s Office for the Eastern District of Tennessee.

2.0 Event Objectives

The overarching objective of the event was to strengthen the Consequence Management (CM) capabilities of government and other emergency response organizations in the wake of a major disaster event or attack in East Tennessee. The TTX gameplay sought to identify, measure, and consolidate participants' subject matter knowledge in emergency response doctrine and agency Emergency Action Plans (EAPs), and to identify procedural or technological "pinch points" in a complex interagency response.

In developing the TTX, HDIAC solicited input and feedback on the MHW scenario from SMEs at multiple federal and state entities, including the Chemical, Biological, Radiological and Nuclear (CBRN) Response Enterprise (CRE) within U.S. Northern Command (USNORTHCOM); several branches and divisions of the Federal Emergency Management Agency (FEMA), as well as the Tennessee Emergency Management Agency (TEMA); the Tennessee Valley Authority (TVA); components of the Department of Energy (DOE); and the U.S. Army Corps of Engineers Readiness Support Center (USACE RSC). A consensus emerged that a complex MHW-based attack event had never been posited for a domestic exercise scenario, and would prove fruitful for a tabletop event.

3.0 Observations & Lessons Learned

The domestic emergency response community would benefit from the execution of more exercises focused on asymmetric events like the MHW "dirty bomb" attack.

More emphasis should be placed on CM exercises and rehearsals on the possibility of a multiple-event attack/disaster occurring—perhaps simultaneously—and should include more emphasis on mitigating a malicious cyberattack degrading CM response capabilities during a response. Most groups have few policies or procedures in place for responding to a cyberattack.

Emergency Action Plans (EAPs) and Incident Action Plans (IAPs) typically do not address asymmetric threats like the MHW attack posited in the TTX; where such plans do consider such threats, treatment of them is limited in scope across numerous boundaries. EAPs and IAPs should also assess the threat of disinformation and hostile propaganda targeted at compounding an asymmetric event; approved Public Service Announcements (PSA) should be included in support annexes to IAPs and EAPs.

While sufficient quantities of select Type Personal Protective Equipment (PPE) appear to exist for most First Responder organizations to perform initial assessments, significant questions arose regarding *where* and *when* the suitable equipment would come from for any major, sustained MHW-type emergency response.

Participants expressed a desire for practical, hands-on training in which modeling and simulation techniques are used to enhance the real-world fidelity of an exercise. The value of such tools is paramount in improving how first responders develop and revise their EAPs and IAPs to incorporate risk assessments for asymmetric and non-traditional threats or incidents.

Participants expressed limited familiarity with USNORTHCOM and other DoD domestic-response capabilities, procedures, and timelines (e.g., Defense Support of Civil Authorities [DSCA] support activities).

State representatives were aware of the organic capabilities housed in the National Guard Bureau's WMD-CST and the U.S. Army Reserve's Consequence Management Units (CMU). However, they were less versed in Title 10 resources and the USNORTHCOM Joint Task Force Civil Support (JTF-CS).

The Emergency Management Agencies (EMAs) displayed good knowledge of CM procedures and federal planning/response requirements and appeared tightly integrated with TEMA, especially given the number of disasters in Tennessee.

There was excellent coordination between representatives from TEMA and FEMA Region 4 (covering the Southeast; headquartered in Atlanta, Georgia). TEMA also possesses a highly qualified group of training professionals who can directly support EMAs and First Responder organizations.

While sophisticated response and monitoring equipment are present in the ORR (at both Oak Ridge National Laboratory and the Y-12 National Security Complex), establishing mutual aid agreements with the City of Oak Ridge is a recent occurrence (circa 2016).

Counties outside the Knoxville metropolitan area have identified numerous resource shortfalls in their daily operations, including manpower availability, training, and equipment. More emphasis should be placed on identifying agency resource and training shortfalls, and on how to request additional assets.

Consequence Management entities would benefit from additional resourcing and rehearsal around the interagency transition points (capabilities and timelines) among federal, state, and local entities in the event of an incident.

When major events take place, detailed planning needs to highlight and prepare for the effective integration of the response capabilities of Non-governmental Organizations (NGOs), Private Volunteer Organizations (PVOs) and International Organizations (IOs).

Large-scale civilian population decontamination and evacuation procedures should be refined (resources, personnel, tactics, collection points, mortuary affairs, and training and procedures).

States might consider adding (or revising) formal tripwires for triggering an invocation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the “Stafford Act,” PL 100-707), along with generating a request for required assets (Title 10) to expedite resource availability.

There is no equipment that can provide protection from all hazards presented in the scenario: chemical, radiological, and fire. Leaders would be forced to accept a large amount of risk, essentially a “best guess”, to provide any response in the hot or warm zones.

4.0 Areas for Improvement

Overall, the feedback that HDIAC received was positive, with participants reporting that they appreciated (a) the wide representation of federal, military, state and local groups (and the opportunities to network with them); (b) a valuable slate of SME presentations in advance of the gameplay; and (c) a series of interesting discussions during the TTX itself. Multiple participants pointed to the discussions around PPE type and availability as particularly valuable.

We also received valuable feedback on several areas where the event did not meet some expectations and recommendations for improvements. We appreciate those who provided their candid assessment. These included:

In its execution, the event was more of a “seminar-style” educational presentation than a tabletop exercise, or even a facilitated discussion. This significantly limited participant engagement and interest.

Where active discussions did occur, they focused more on the question, “Is there a plan in place for this?”, with a minimal amount of peer-to-peer participant discussion of scenario details or probable agency response actions.

The TTX would have benefited from better visual aids, especially overarching event map(s) that detailed the precise location of the MHW explosion and the extent of the plume, especially as winds shifted hour-by-hour. Charts depicting the response agencies involved, and their reporting structures (or relationships) would also have been useful to many participants.

Several agencies that would have been central to the MHW response scenario were not represented at the TTX. Also, those groups present for the event might have been prompted to sit in a grouped manner, ideally with placards, so that other participants could easily identify their affiliation.

Some participants commented that the radiological component of the TTX scenario and response was very limited, with discussions focusing mostly on the fire and chemical threat to first responders.

While the “real-time” nature of the scenario discussions was well-received, a few participants suggested that after *hour 2*, several scenario hours could be compressed into one TTX hour, and/or that halfway through the gameplay, the scenario could “jump” ahead 6 or 12 hours to achieve a more realistic response timeline.

Biography

Joel Hewett is an energy policy and national defense researcher, writer, and analyst for KeyLogic Associates, where he applies more than 15 years of experience in assessing the utility of advancements in science and technology for furthering national aims. In his role, he supports the Homeland Defense & Security Information Analysis Center (HDIAC), a component of the U.S. Department of Defense, with a focus on energy systems and critical infrastructure protection. He holds an M.S. from the Georgia Institute of Technology in the history and sociology of technology and science, where he was the inaugural Melvin Kranzberg graduate fellow; he also holds an A.B. in literature from Davidson College, where he was a John Montgomery Belk scholar.

Appendix A: Exercise Participant Read-Ahead Packet (May 2023)

Although some items are marked “For Exercise Use Only”, the information contained within is unclassified and has been approved for public release by the appropriate authority.

2023

MIXED-HAZARDOUS WASTE CONSEQUENCE MANAGEMENT EVENT

REAL-TIME TABLETOP EXERCISE

EXERCISE PARTICIPANT READ-AHEAD PACKET

- | | |
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| 2. PURPOSE | 6. EXERCISE GAMEPLAY |
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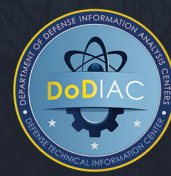
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JUNE 13-15, 2023

ORAU POLLARD TECHNOLOGY CONFERENCE CENTER
210 BADGER AVE, OAK RIDGE, TENNESSEE 37830

FOR EXERCISE PARTICIPANT USE ONLY



EXERCISE PARTICIPANT READ-AHEAD PACKET

1. EVENT OVERVIEW

The U.S. Department of Defense (DoD) has tasked the Homeland Defense & Security Information Analysis Center (HDIAC) to design, develop, and execute this real-time tabletop exercise (TTX), which posits a deliberate attack against local and national infrastructure using mixed-hazardous waste (MHW) threat technologies. HDIAC is a DoD entity that supports scientific and technical research and development (R&D) in both the civilian and military homeland defense and first responder communities.¹

This exercise will be conducted at the ORAU Pollard Technology Conference Center in Oak Ridge, Tennessee, from June 13 to 15, 2023.

2. PURPOSE

The overarching goal of this TTX is to strengthen the consequence management (CM) capabilities of government and other emergency response organizations in the wake of a major disaster event or attack in East Tennessee.

This goal will be achieved by bringing together representatives from local, county, state, and federal agencies to (1) examine and rehearse their consequence management policies and capabilities, (2) establish and foster working relationships with partner agencies, and (3) examine where current practices may be improved. TTX gameplay will follow the principles of “experiential” learning, a method proven to “reveal gaps in interorganizational collaboration” while significantly improving “the capacity [of exercise participants] to handle critical incidents or emergencies.”² The exercise will highlight presented operational and contingency plans for dealing with potential “real world” events and supporting CM requirements. The exercise is an eight-hour tabletop event structured to present realistic problems, presented sequentially in a real-time, high fidelity gameplay environment.

Committed participants include local law enforcement and emergency management officials, Federal Emergency Management Agency (FEMA) representatives, Department of Energy (DOE) responders, and National Guard Bureau Weapons of Mass Destruction (WMD) Civil Support Team (WMD-CST) personnel.

3. EVENT SCHEDULE

Day 1 – Tuesday, June 13, 2023

1230-1330: Arrival, Registration, Coffee

1330-1400: Opening Remarks

1400-1500: Scenario Overview

1500-1700: Subject Matter Expert (SME) Presentations (*topics to include radiological detection tools,*

¹ For more information on HDIAC and the DoD IAC program (DoDIAC), please visit <https://hdiac.org/> and <https://dodiac.dtic.mil/>

² Roud, E., A. H. Gausdal, A. Asgary, and E. Carlström. “Outcome of collaborative emergency exercises: Differences between full-scale and tabletop exercises.” *Journal of Contingencies and Crisis Management*, vol. 29, no. 2, <https://doi.org/10.1111/1468-5973.12339>, November 2020.

lessons-learned from past TTXs, virtual-and augmented-reality enhanced first responder training technologies)

Day 2 – Wednesday, June 14, 2023

0730-0800: Arrival, Coffee

0800-1200: Exercise Gameplay, Part 1

1200-1300: Lunch (*provided on-site*)

1300-1700: Exercise Gameplay, Part 2

Day 3 – Thursday, June 15, 2023

0730-0800: Arrival, Coffee

0800-1200: After-Action Review

Day 1 will present an overview of the posited scenario, provide additional details regarding how exercise gameplay will be conducted, and culminates in several interagency (IA) and SME informational briefings. **Day 2** will consist mostly of TTX gameplay, in which participants review and address events (and supporting subevents) from the perspective of their agency’s position, policies, and current capabilities, including its resources and resource shortfalls. Note that unplanned events (or exercise “injects”) are likely to occur. **Day 3** will conclude the exercise with a short debrief and question-and-answer session for both exercise participants and external SMEs. In the weeks following the event, HDIAC personnel will produce an After-Action Review (AAR) report that documents key lessons-learned from the TTX.

4. EVENT BACKGROUND

In developing this TTX over the last 12 months, HDIAC personnel engaged a wide array of key leaders and SMEs from the federal government, the State of Tennessee, as well as industry and academia for their input and technical review. (Representative organizations consulted include United States Northern Command [USNORTHCOM], FEMA, the Tennessee Emergency Management Agency [TEMA], DOE, the Nuclear Regulatory Commission [NRC], the Tennessee Valley Authority [TVA], the National Guard Bureau [NBG], and the U.S. Army Corps of Engineers [USACE].)

These groups were engaged to ensure that the posited exercise scenario (1) is realistic in the scope of its threat vectors and consequences and (2) addresses facets of a major CM response not already captured within existing organizational training and exercise programs and requirements. Moreover, the TTX scenario was developed following a rigorous review of credible assessments of the threats posed to critical infrastructure in the continental United States (CONUS) by hostile actors.

Current DoD strategic guidance has established that the homeland “is no longer a sanctuary” and that the rise of near-peer military competitors, transnational crime syndicates, and lone-wolf terrorists increasingly threatens our open and stable international order.³ Critically, select nonstate actors are likely to acquire and employ chemical, biological, radiological, or nuclear (CBRN) weapons in unexpected ways against the United States and its allies.⁴ Among the domestic infrastructure sectors most likely to be targeted includes are what the United States Army Training and Doctrine

³ Department of Defense U.S. DoD., Summary of the National Defense Strategy of the United States (January 2018), 3; Joint Chiefs of Staff, *Description of the National Military Strategy 2018* (July 2019), 2; Executive Office of the President, *Interim National Security Strategic Guidance* (March 2021), 7–8.

⁴ Joint Chiefs of Staff. *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World (JOE 2035)*, July 2016.

Command (TRADOC) terms the “Rule of Law / Government institutions.” Hostile actors are deemed very likely to use a CBRN attack to degrade the confidence of citizens in the U.S. government’s ability to respond to a domestic incident quickly and capably.⁵

HDIAC identified an important need among the emergency response, CBRN, and consequence management communities for an exercise following the scenario outlined next. HDIAC’s engagement with potential participating organizations yielded a high level of interest in this scenario from both military and civilian entities. Multiple national-level representatives and SMEs have commented that the scenario of an MHW event outside of a major federal district—one engaged in both scientific and national security-focused nuclear and radiological research and development (R&D)—has not been adequately addressed.

5. SCENARIO OVERVIEW

An MHW device (or “dirty bomb”) is intentionally exploded in East Tennessee by unknown hostile actors, potentially targeting a key electrical infrastructure node. The follow-on combustion of the MHW source material—which was supplemented by a large volume of explosive incendiary materials—releases potentially hazardous levels of radionuclides and other unknown dangerous chemicals into the environment, threatening to contaminate numerous commercial and residential locations. Prevailing winds soon transport the MHW plume toward the federal Oak Ridge Reservation, where multiple U.S. government and national security sites conduct nuclear power and radiological R&D (e.g., Oak Ridge National Laboratory [ORNL], and the Y-12 National Security Complex [Y-12]). A secondary attack on an indeterminate target is deemed likely.

The explosion and resultant fire trigger a major governmental response, with authorities declaring a major disaster and multiple state, local, county, defense, and federal agencies responding. The TTX begins shortly after hour 0, as leaders start receiving key information about the nature of the device and the scope of the damage and begin to take the complex steps needed to coordinate their CM response.

Note: Neither the scenario described nor any of the TTX’s supporting documents make any claim to represent current U.S. government policies, positions, or capabilities; both are intended to facilitate interorganizational discussion around a hypothetical event.

6. EXERCISE GAMEPLAY

To facilitate your organization’s participation in the exercise, appended to this document are several annexes which will help guide the TTX gameplay. *Annex A* and *Annex B* present a series of participant “templates” to help your players review organizational policies, procedures, and resources in advance of the exercise. *Annex A* is a form-fillable PowerPoint deck, with a slide dedicated to each of the first eight hours of the event (e.g., the slide for Hour Two focuses on the agency information management activities).

Each blank hour scenario template should be filled out prior to your arrival and as it pertains to your organization from a local, City, County, State, or National perspective for discussion during the

⁵ TRADOC Deputy Chief of Staff, G-2., *The Operational Environment and the Changing Character of Warfare* (PAM 525-92, October 2019), 24.

event. To further assist you in preparing for the exercise, *Annex B* is an example of a filled-out template packet provided by the Chemical Response Enterprise (CRE) of USNORTHCOM.

All responses should be based on agency-approved empirical data sets, wherever CONPLANS (contingency plans) and OPLANS (operational plans) exist. Shortfalls or planning deltas should be identified and addressed during the exercise. The participant templates designate up to eight primary event drivers to be measured during gameplay, but likely, just 4–6 events will be executed and measured based during the exercise timeframe and discussion. This tabletop exercise will only concentrate on the first eight hours of the event, highlighting key junctures in the interagency response.

Annex C is a simple, one-page form that exercise staff will use to capture participant observations and feedback during the event. Hard copies of this form will be provided on-site and can be filled out whenever any comments or questions arise. These forms will be collected at the end of each day and integrated into the formal AAR. Data collected during the exercise will follow the U.S. Army Center for Army Lessons Learned (CALL) in its approach to data collection.

Annex D presents an example of the response procedures (or “algorithms”) that our exercise moderator will use to guide the event’s gameplay and shape participant discussions. The format will follow the organizational structure of the National Incident Management Systems (NIMS) to ensure commonality of operation and integration. An example algorithm is provided to further reinforce the level of planning detail reviewed in advance of the event.

Finally, *Annex E* presents an “Intelligence Background” report, which serves as a strategic appraisal of the general threat environment for the homeland. This allows all participants to begin the exercise from a shared “known point” during the discussions. Additional intelligence information will be provided on Day 1 of the exercise, with more specific granularity concerning threats and potential target sets within East Tennessee and the Oak Ridge area.

7. EVENT OBJECTIVES

The overarching purpose of this exercise is to identify, measure, and consolidate the participants’ subject matter knowledge, review their doctrine and EAPs, consolidate resource allocations, and identify shortfalls. Our end-state is to highlight collective capabilities of executing a national-security based, multifaceted consequence management event that crosses multiple jurisdictions.

Valuable takeaways include (1) familiarizing participants with their functionally-aligned colleagues from the local, State and National levels concerning Consequence Management, (2) review and highlight local EAPs and Mutual Aid Agreements and their integration into the State of Tennessee’s Emergency Management System, and (3) inform participants regarding TCA 58-2-107, the Tennessee Emergency Management Plan (TEMP), the Stafford Act, and other federal capabilities, once requested for resource and notification procedures.

Desired outcomes are categorized into four areas of concentration: (1) Exercise Scope, (2) Terminal Learning Objectives, (3) Desired End-State, and (4) Measurements.

1. Exercise Scope: The scenario and exercise will consider multiple components of both an immediate and ongoing response to the MHW incident, which may include:

- Pre-incident preparedness
- Command, Control and Communication
- RDD and MHW incident recognition
- RDD and MHW device type/yield determination
- MHW plume exposure, deposition, and modeling
- MHW spread measurement and mapping
- Releases to water, soil, plants, and animals
- Agricultural and/or drinking water embargoes
- Access to medical care/MHW health expertise
- Public notification/protective actions (evacuations, SIP orders)
- First responder health & safety
- Incident site access and contamination control

2. Terminal Learning Objectives: Upon completion of this exercise, participants will be better able to:

- Understand the capabilities and “limitations at large” of various government organizations in response to a major disaster and its impact on CM requirements, planning, and resources at the National and State levels
- Identify key organizations and points of contact for future CM planning and execution
- Highlight and record key organizational shortfalls and limitations for future research and resourcing

3. Desired End-State: Assuming this scenario occurs, this conference will explore three key aspects of marshalling an effective and coordinated response:

- Advantages and limitations of the Nuclear/Radiological Incident Annex (NRIA) of the National Response Framework (NRF) as it applies to national and state response capabilities
- Science, missions, and tactics to protect the public from radiation exposure
- Assessing impacts to the electric grid and assuring electricity delivery to primary and secondary communities

4. Measurements: The event’s *collective measurements of performance (MOP)* will be the integrated measures used in collecting, analyzing, and reporting the data from the local, state, and federal participant levels. *Collective measurements of effectiveness (MOEs)* will assess changes in systemic behavior of the participating agencies, as tied to a desired end state.

8. GUIDANCE

As a tabletop exercise, all scenario “events” and participant behaviors are simulated; no “real” actions are carried out during the exercise. Moreover, the TTX is intended to provide an environment conducive to an open and frank exchange of information. As the U.S. Army Corps of Engineers notes:

“There are no right or wrong responses during the exercise. There are no consequences for exploring alternative solutions as part of the discussion. The success of this exercise reflects the full and honest participation of the exercise participants and the impact the lessons learned during the exercise have on the revision and enhancement of plans, policies, and procedures.

It is not unusual during the course of a discussion to learn that important policies or procedures are not clearly defined, not familiar to all those involved, or simply less efficient than a procedure used by a different group. Events such as this provide an opportunity for all involved to learn from the strengths of others.”⁶

⁶ U.S. Army Corps of Engineers, Readiness Support Center, “Overview: 2021 Exercise Eagle Horizon (COOP Exercise),” May 2021.



Annex A: Mixed-Hazardous Waste (MHW) Scenario Participant Template Instructions

Event:

Your Organization:

- The templates in this annex are examples of the data that we request participants are familiar with concerning their organization's Emergency Action Plans (EAPs), Standard Operating Procedures (SOPs), Standard Operating Guides (SOGs), or Contingency Plans (CONPLANS) pertaining to their Consequence Management (CM) response capabilities and criteria. The MHW templates presented in *Annex B* have been filled out by the Chemical Response Enterprise (CRE) of United States Northern Command (USNORTHCOM) to assist you in your preparation.
- We request that all participating agencies, departments, and organizations become familiar with their CM protocols and arrive prepared to integrate their knowledge and preplans into the tabletop exercise (TTX). This data will be shared during the exercise and collected upon completion for integration into the formal After-Action Review (AAR) process.
- While some organizations may not have formalized processes or mutual aid agreements established and/or approved, any applicable shortfalls and/or questions should be highlighted for further discussion and follow-up.
- These templates are designed to familiarize and codify operational requirements for organizations at all levels using the National Incident Management System (NIMS) protocol for planning, training, and resource identification and development.
- For further information on filling out your organization's working documents, please contact HDIAC exercise staff via email at training@hdiac.org or by calling (443) 360-4600.

See the attached PowerPoint file for a fillable template

Annex B: Example Mixed-Hazardous Waste (MHW) Scenario Participant Template

Event: MHW Detonation/Explosion - Hour One	Your Organization: USNORTHCOM
<p>CM Supporting SOPs/Policy Documents:</p> <ul style="list-style-type: none"> • CONPLAN 3500-14 (TAB C) • CJCS CBRN Response EXORD <p>Actions on Event Notification:</p> <ul style="list-style-type: none"> • USNORTHCOM Joint Operations Center (JOC) is notified of the event and executes official notification procedures • USNORTHCOM designates ARNORTH as the Joint Force Land Component Command (JFLCC) • Joint Task Force – Civil Support (JTF-CS) receives official notification of event • Request for Interagency LNO Augmentation <p>Requests for Information (RFI) (from supporting organizations):</p> <ul style="list-style-type: none"> • USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS) • State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge) 	<p>Organic Response Capabilities:</p> <ul style="list-style-type: none"> • National Guard: Tennessee Weapons of Mass Destruction – Civil Support Team (WMD-CST) activated on 3 hour recall • LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations <p>External Requests for Support:</p> <ul style="list-style-type: none"> • Begin contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.) <p>Communications Requirements:</p> <ul style="list-style-type: none"> • Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm’s Package notified for deployment

Event: MHW Information Management Activities - Hour Two	Your Organization: USNORTHCOM
<p>CM Supporting SOPs/Policy Documents:</p> <ul style="list-style-type: none"> • CONPLAN 3500-14 (TAB C) • CJCS CBRN Response EXORD <p>Ongoing Actions:</p> <ul style="list-style-type: none"> • USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUS-NORTHCOM • USNORTHCOM, ARNORTH, and JTF-CS begin contingency planning as necessary • Begin integration of Interagency LNO Augmentation <p>Requests for Information (RFI) (from supporting organizations):</p> <ul style="list-style-type: none"> • USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS) • State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge) 	<p>Organic Response Capabilities:</p> <ul style="list-style-type: none"> • National Guard: TN Governor initiates deployment of the 45th WMD-CST • National Guard: Select CBRN Enhanced Response Force Packages (CERFPs) and Homeland Response Forces (HRFs) notified IAW State and Regional agreements • LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations <p>External Requests for Support:</p> <ul style="list-style-type: none"> • Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.) <p>Communications Requirements:</p> <ul style="list-style-type: none"> • Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm’s Package notified for deployment

Event: MHW Verification - Hour Three	Your Organization: USNORTHCOM
<p>CM Supporting SOPs/Policy Documents:</p> <ul style="list-style-type: none"> • CONPLAN 3500-14 (TAB C) • CJCS CBRN Response EXORD <p>Ongoing Actions:</p> <ul style="list-style-type: none"> • USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUS-NORTHCOM • CDRUSNORTHCOM initiates changes to DoD CBRN Response Posture Levels (CRPLs) as necessary • USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary • Begin integration of Interagency LNO Augmentation <p>Requests for Information (RFI) (from supporting organizations):</p> <ul style="list-style-type: none"> • USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS) • State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge) 	<p>Organic Response Capabilities:</p> <ul style="list-style-type: none"> • National Guard: 45th WMD-CST deploys at N+3 hours • LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations <p>External Requests for Support:</p> <ul style="list-style-type: none"> • Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.) <p>Communications Requirements:</p> <ul style="list-style-type: none"> • Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

Event: MHW Agency Response - Hour Four	Your Organization: USNORTHCOM
<p>CM Supporting SOPs/Policy Documents:</p> <ul style="list-style-type: none"> • CONPLAN 3500-14 (TAB C) • CJCS CBRN Response EXORD <p>Ongoing Actions:</p> <ul style="list-style-type: none"> • USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUS-NORTHCOM • USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary • USNORTHCOM notification to the Defense CBRN Response Force (DCRF) as necessary • Begin integration of Interagency LNO Augmentation <p>Requests for Information (RFI) (from supporting organizations):</p> <ul style="list-style-type: none"> • USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS) • State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge) 	<p>Organic Response Capabilities:</p> <ul style="list-style-type: none"> • National Guard: 45th WMD-CST begins arriving at incident location and reports to the Incident Commander (IC) • National Guard: CERFPs and HRFs mobilization begins (if necessary) at direction of State Governors • LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations <p>External Requests for Support:</p> <ul style="list-style-type: none"> • Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.) <p>Communications Requirements:</p> <ul style="list-style-type: none"> • Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

Event: [POTENTIAL INJECT] Fire at Commercial Lithium Storage Site - Hour Five
Your Organization: USNORTHCOM
CM Supporting SOPs/Policy Documents:

- CONPLAN 3500-14 (TAB C)
- CJCS CBRN Response EXORD

Ongoing Actions:

- USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUS-NORTHCOM
- USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary
- DCRF is alerted, begins mobilization, and prepares to deploy as directed by CDRUSNORTHCOM
- Begin integration of Interagency LNO Augmentation

Requests for Information (RFI) (from supporting organizations):

- USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS)
- State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge)

Organic Response Capabilities:

- National Guard: 45th WMD-CST continues operations and advises IC
- National Guard: CERFPs begin deployment (if necessary) as directed by State Governors
- National Guard: HRFs mobilization continues (if necessary) at direction of State Governors
- LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations

External Requests for Support:

- Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.)

Communications Requirements:

- Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

Event: MHW 2 Event Verification - Hour Six
Your Organization: USNORTHCOM
CM Supporting SOPs/Policy Documents:

- CONPLAN 3500-14 (TAB C)
- CJCS CBRN Response EXORD

Ongoing Actions:

- USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUS-NORTHCOM
- USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary
- DCRF is alerted, begins mobilization, and prepares to deploy as directed by CDRUSNORTHCOM
- Begin integration of Interagency LNO Augmentation

Requests for Information (RFI) (from supporting organizations):

- USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS)
- State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge)

Organic Response Capabilities:

- National Guard: TN Governor initiates deployment of the 45th WMD-CST
- National Guard: Select CBRN Enhanced Response Force Packages (CERFPs) and Homeland Response Forces (HRFs) notified IAW State and Regional agreements
- LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations

External Requests for Support:

- Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.)

Communications Requirements:

- Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment



Event: MHW Agency Response - Hour Seven	Your Organization: USNORTHCOM
<p>CM Supporting SOPs/Policy Documents:</p> <ul style="list-style-type: none"> • CONPLAN 3500-14 (TAB C) • CJCS CBRN Response EXORD <p>Ongoing Actions:</p> <ul style="list-style-type: none"> • USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUS-NORTHCOM • USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary • DCRF is alerted, mobilization, and prepares to deploy as directed by CDRUSNORTHCOM • Begin integration of Interagency LNO Augmentation <p>Requests for Information (RFI) (from supporting organizations):</p> <ul style="list-style-type: none"> • USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS) • State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge) 	<p>Organic Response Capabilities:</p> <ul style="list-style-type: none"> • National Guard: 45th WMD-CST continues operations and advises IC • National Guard: CERFPs deploys to incident site (if necessary) as directed by State Governors • National Guard: HRFs mobilization continues (if necessary) at direction of State Governors • LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations <p>External Requests for Support:</p> <ul style="list-style-type: none"> • Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.) <p>Communications Requirements:</p> <ul style="list-style-type: none"> • Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

Event: MHW CM Highlights - Hour Eight	Your Organization: USNORTHCOM
<p>CM Supporting SOPs/Policy Documents:</p> <ul style="list-style-type: none"> • CONPLAN 3500-14 (TAB C) • CJCS CBRN Response EXORD <p>Ongoing Actions:</p> <ul style="list-style-type: none"> • USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUS-NORTHCOM • USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary • DCRF is alerted, begins mobilization, and prepares to deploy as directed by CDRUSNORTHCOM • Begin integration of Interagency LNO Augmentation <p>Requests for Information (RFI) (from supporting organizations):</p> <ul style="list-style-type: none"> • USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS) • State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge) 	<p>Organic Response Capabilities:</p> <ul style="list-style-type: none"> • National Guard: 45th WMD-CST continues operations and advises IC • National Guard: CERFPs begin arriving at incident site and report to the IC • National Guard: HRFs mobilization continues (if necessary) at direction of State Governors • LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations <p>External Requests for Support:</p> <ul style="list-style-type: none"> • Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.) <p>Communications Requirements:</p> <ul style="list-style-type: none"> • Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

Annex C: Observations and Feedback Form

HDIAC MHW TTX - Comments / Observations / Lessons Learned

Name/organization:

Observation:

Comments:

Recommendation:

Name/organization:

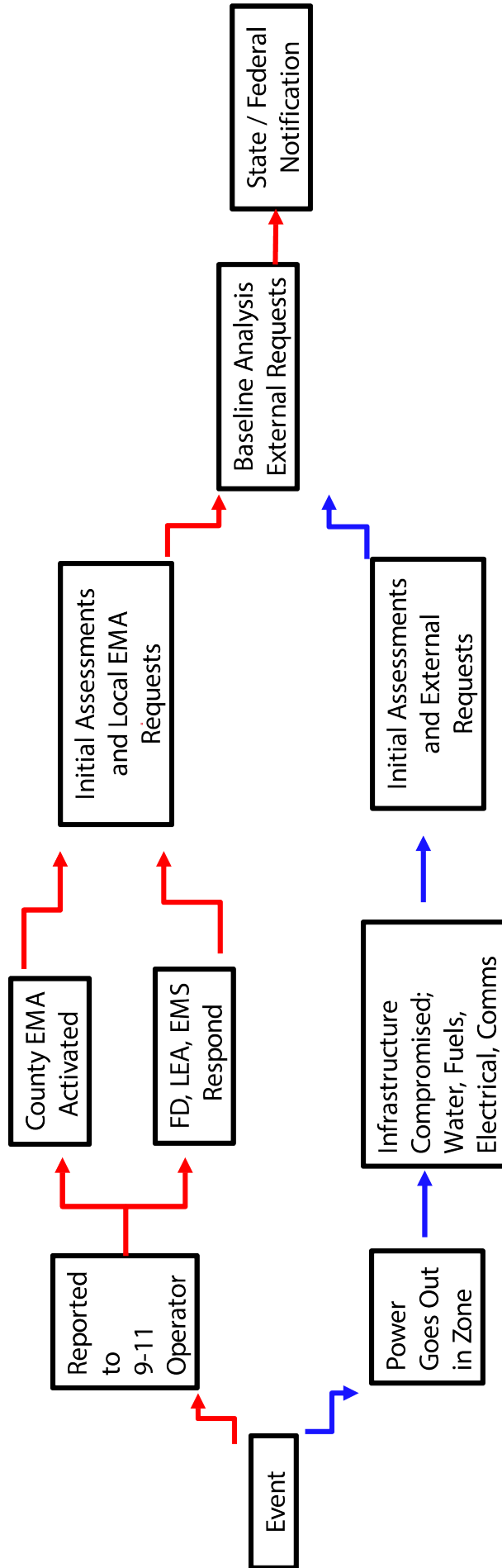
Observation:

Comments:

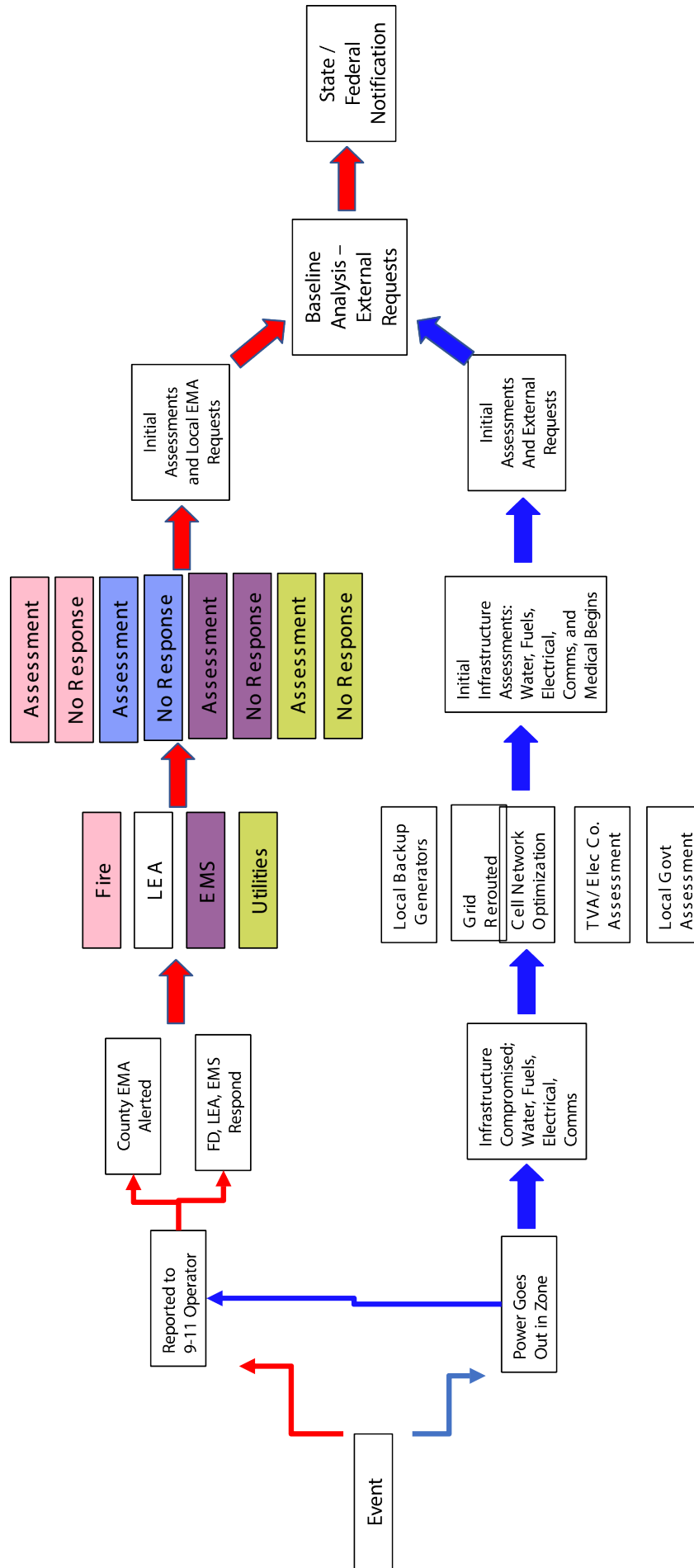
Recommendation:

Annex D: Example TTX Gameplay Algorithms

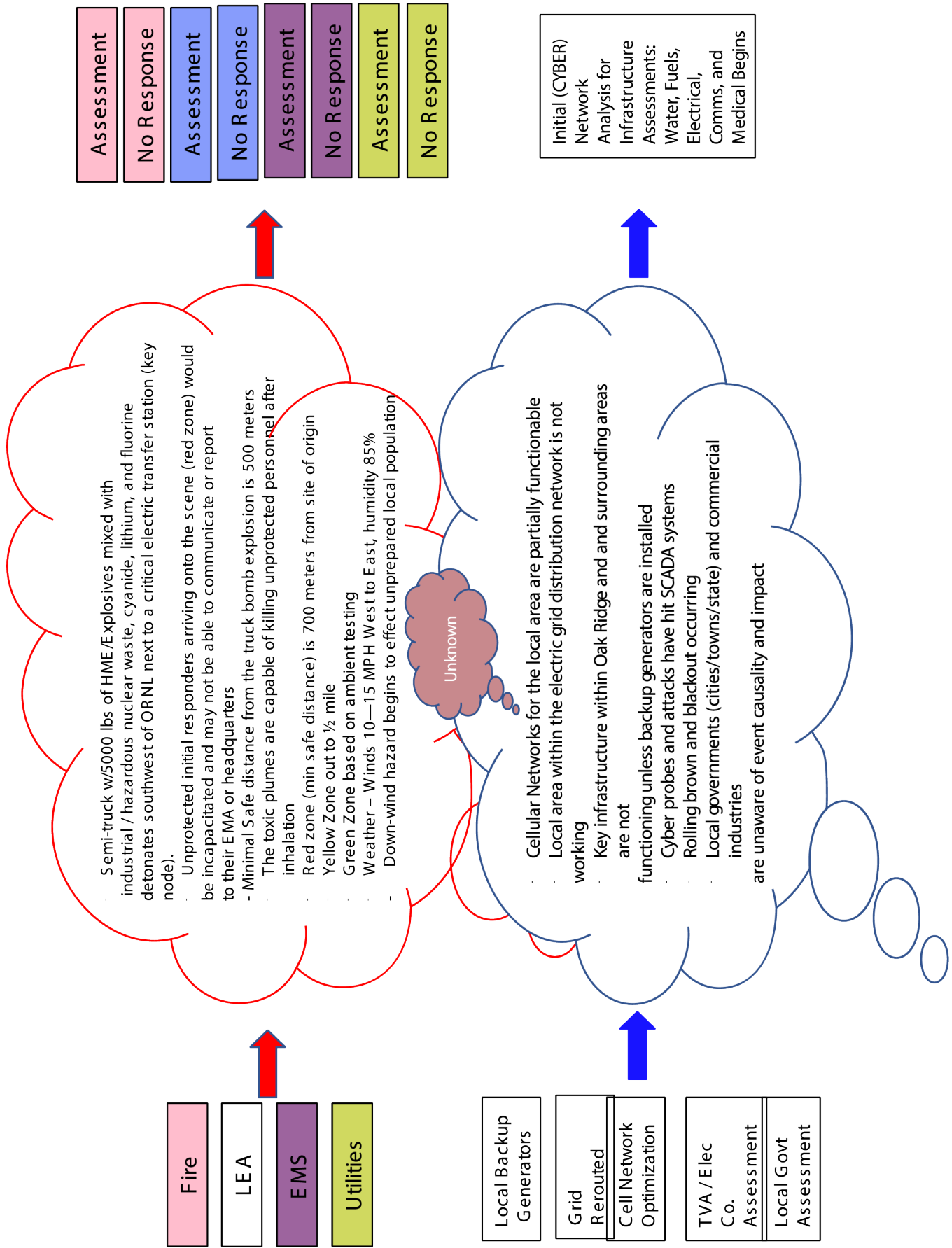
MHW Table-Top: Event One, Zero Hour Explosion
Algorithm One, Slide One



MHW Table-Top: Event One, Zero Hour - Electrical Power Transfer Station Explosion
 Algorithm One, Slide Two: Normal Baseline



MHW Table-Top Event One: Zero through 30 Minutes after Explosion Rural/Local Algorithm One, Slide Three: Actions on Scene



MHW Table-Top: Event One, Zero through Hour Two - Local/State Notification Algorithm One, Slide Four: Actions at EMA with EAPs

- Fire Assessment
- No R response
- LEA Assessment
- No R response
- EMS Assessment
- No R response
- Infra Assessment
- No R response



- Initial (CYBER) Network Analysis for Infrastructure Assessments: Water, Fuels, Electrical, Comms, and Medical Begins



Initial reports begin coming in to 911; county EMA Activated

- Who and what variables are required to stand up a Task Force (TF) under the National Incident Management System (NIMS)?
 - Are there designated trained personnel to fill out and operate the various components (Command and Management, Preparedness, Resource Management, Communications and Information Support, Supporting Technologies, and Ongoing Management and Maintenance)?
 - Is there a pre-designated Incident Commander (IC) from the County(ies)?
- Is the local EMA staffed and organized to handle this type of event; with approved and resourced Emergency Action Plans (EAPs)?
- Are they resourced with adequate PPE with trained teams capable of conducting a site survey?
- When does the local government notify the State (TEMA) or Governor's Office and request assistance or declare a State of Emergency?
- Does the county EMA have existing Mutual Aid Agreements with organic and surrounding counties?
- Does the county EMA have redundant communications and alert procedures for the local governments?
- Is there a formal evacuation process for civilians that has been exercised?
 - Notification process for local hospitals
 - What is the approved process for declaring a State of Emergency?
- Does the NIMS organization include the commercial infrastructure leadership, as well as local federal activities (ORNL, Y-12)?
 - What is the interface between local government and local federal activities?
 - What is the interface between local government and commercial industries?

Actions at the Local Level:

Actions at the State Level:

Actions at the National Level:

**MHW Table-Top: Event One: Zero to 2 Hours – Local, State and National Notification and Synchronization
Algorithm One, Slide Five: Actions at EMA with EAPs**

- Does the local EMA formally notify the State of an unmeasured, undeterminable or significantly dangerous event?
- Does the local EMA/Community declare a State of Emergency?
- Does the local EMA/Community establish an IC under the NIMS construct?
- Is the local EMA/community capable of communicating with organic responders?
- Is the local EMA/community capable of communicating with external and higher responders?
- Is the local EMA/community capable of initiating either a stay in place or evacuation order?
- Is the local EMA/community capable of conducting local and multiple MCI's?
- Is the local EMA/community capable of conducting local DECON and surveys?
- Has the local EMA requested Mutual Aid from the surrounding areas and counties?

Actions at the Local Level:

- Is the State aware of the potential magnitude of the event and resources required?
- Has the State established a Crisis Action Team (CAT) and begun executing their EAPs?
- Is the Governor's Office prepared to declare a State of Emergency?
- Has Title 32 been initiated for CSU and CRT response?
- Has the State initiated the stand up of a Consequence Management Task Force?
- Are additional communications packages being allocated to the disaster area?

Actions at the State Level:

- Are Federal Authorities notified of the event?

Actions at the National Level:

ANNEX E: INTELLIGENCE BACKGROUND

While this exercise scenario is hypothetical and fictional in nature, the information used to scope the event is based on open-source documents, articles, case studies, and independent assessments of risk to the U.S. homeland.

In 2023, the U.S. government (USG) is experiencing significant political, economic, and cyber-based confrontations with multiple hostile actors below the threshold of armed conflict. News reports and intelligence officials have acknowledged cyber probing (and denial of service attacks) of domestic critical infrastructure sites, as well as commercial and government operated/affiliated SCADA (supervisory control and data acquisition) control systems. Both non-state actors and adversarial nations (e.g., China, Russia, Iran) are known to be behind many of the attacks.

A series of coordinated denial of services (DoS) attacks have proven successful against power generation (production and distribution), fuel transfer (commercial pipelines and transfer nodes), drinking water treatment facilities, mass transportation networks (rail, internal waterways (shipping), commercial cellular networks, pharmaceutical production, as well as precision navigation and timing (PNT) capabilities.

Strategic Appraisal

Political: Current long-term United States/China relations have been faltering, with political positioning and low levels of warnings being issued at international events concerning China's Belt and Road Initiative (BRI), aggressive Chinese military activities within the Pacific region, as well as economic and environmental violation of commercial fishing zones and international fishing treaties.

Military: The USG has established and increased participation in joint/combined military exercises with the Association of Southeast Asian Nations (ASEAN), Japan, Australia, the Philippines, the United Kingdom, and India, as a deterrent show of force for "Freedom of Transit Operations" in the South China Sea. China continues to build "Militarized Island Fortresses" within these economic routes causing US Indo-Pacific Command (USINDOPACOM) to submit a Request for Forces (RFF) to execute flexible deterrent options (FDO) to counter China's "increasingly hostile maritime actions." These forces include an additional carrier group (CVG) be pre-positioned in the Philippines and a U.S. Marine Corps Amphibious Ready Group (ARG) and Marine Expeditionary Unit (MEU) be moved to the region to lower response time.

Informational: America's adversaries and independent actors continue to conduct a series of independent and coordinated programs of misinformation, disinformation, and hostile propaganda (MDHP) against USG policies and objectives, both domestically and internationally. These programs are divisive in nature, difficult to counter, and, in some cases, transparent to the targeted audience. The USG and many of its allies remain in a reactive response role of countering these programs.

Economic: The USG interagency community is conducting a threat analysis review against strategic critical infrastructure networks: **logistics** (supplies, production, and distribution networks), **transportation** (rail networks, commercial air services, sea transport, and port operations), **power generation capabilities** (power plants, dams transmission lines, fuels, solar and wind steady state, and peak capabilities), **communication** (cellular, satellite, and other broadcast networks), **medical** (hospital capacity and training) and informational networks (SIPR/NIPR, commercial USG data/social media networks, and Space networks), and **nodal security** (SCADA devices).

Cyber: United States and allied cyber forces are attempting to synchronize their capabilities to respond to China and Russia’s advances in artificial intelligence (AI). Significant concerns exist in the Space domain, social media, military command and control (C2), cellular networks, and the ability to interfere with domestic production networks through cyber-based probes and system data manipulation. Previous USG attempts to influence commercial entities’ SCADA design, development, and integration have been met with limited success by USG commercial companies.

Current activities and assessments within the United States in the “Last 90 Days”

Informational: A series of continuous and deliberate disinformation programs are being conducted by nation-states and independent actors to discredit the USG and its allies’ foreign and domestic policies, regulations and trade, monetary and defense treaties, and security agreements. These informational attacks are occurring across the operational spectrum and attempting to influence every facet of U.S. society and its government policy makers.

Cyber: Adversarial cyber acts and activities have increased across the U.S. operational continuum, causing federal, state, and U.S.-based commercial activities to increase their defensive cyber postures. These risks have fostered a nascent environment of increased data sharing but a disorganized or incomplete implementation of counter activities remains.

Power: General power (electric) availability to the U.S. domestic consumer audience has been sufficient, but man-made and natural event-driven rolling blackouts have become more common throughout the Western States and Southeast based on localized droughts, severe weather conditions, and fires.

Increased Active Foreign Intelligence Services (FIS) Surveillance and Increased Acts of Hostile Manipulation of U.S. Critical Infrastructure and Nodes: Since the Russian invasion of Ukraine, the United States and its NATO allies are experiencing significant increases in FIS monitoring with active and passive surveillance and cyber manipulation of its military and critical infrastructure. These countries are experiencing hundreds of thousands of active probes daily to their commercial and governmental networks. The primary threats being targeted against domestic communications (computer, cell networks, social media, E-911, and medical), electrical (production and distribution), gas (production and distribution), banking (credit cards, domestic and international transactions, and individual accounts), manufacturing (all phases), transportation (air, sea, ground, and rail), logistics (storage and networks), and food production.

Increased United States Border Crossings and Importation and Distribution of Illicit Drugs (e.g., Fentanyl): It is assessed that foreign operatives and international criminal organizations (ICO) have entered the U.S. homeland via the southern border to advance hostile/criminal activities. The use of advanced technologies (GPS/PNG jammers, cellular network manipulation, and infrastructure probes and attacks) against U.S. law enforcement activities (LEA) has increased dramatically. ICO “Coyote Networks” have established state-of-the-art transit networks for personnel smuggling and narcotics, causing increases in crime, human trafficking, and illicit drug consumption within the United States. There are also significant signs of coordination between ICOs and belligerent nation states to increase illegal activities, while decreasing the effectiveness of domestic law enforcement activities, through active surveillance and targeting of LEA platforms and command and control networks.

Appendix B: TTX Gameplay Presentation Slides (June 14, 2023)

Although some items are marked “For Exercise Use Only”, the information contained within is unclassified and has been approved for public release by the appropriate authority.

2023

MIXED-HAZARDOUS WASTE CONSEQUENCE MANAGEMENT EVENT

REAL-TIME TABLETOP EXERCISE

HOSTED BY THE
**HOMELAND DEFENSE & SECURITY
INFORMATION ANALYSIS CENTER (HDIAC)**

A COMPONENT OF THE DEPARTMENT OF DEFENSE

JUNE 13 — JUNE 15

POLLARD TECHNOLOGY CONFERENCE CENTER
OAK RIDGE, TENNESSEE



Exercise Preview – Agenda

1. Key Planning Documents for CM/Disaster Planning
2. National Response Framework (NRF) Emergency Support Function (ESF) Annexes
3. National Incident Management System (NIMS)
4. Emergency Federal Grants Programs
5. Stafford Act
6. Federal Programs for Volunteer FD (Train and Equip)

Key Planning Documents for CM/Disaster Planning

There are a variety of key supporting government documents that may be needed to execute disaster planning, depending on the specific situation and context. Some examples include:

1. **National Response Framework (NRF):** The NRF provides guidance on how the nation responds to all types of disasters and emergencies, including natural disasters, terrorist attacks, and other incidents.
2. **National Incident Management System (NIMS):** NIMS provides a standardized framework and approach for managing incidents, regardless of size or complexity.
3. **State Emergency Operations Plans (SEOPs):** SEOPs outline how a state will prepare for, respond to, and recover from disasters and emergencies.
4. **Local Emergency Operations Plans (LEOPs):** LEOPs provide guidance on how local governments and agencies will respond to disasters and emergencies within their jurisdiction.
5. **Hazard Mitigation Plans (HMPs):** HMPs outline strategies and actions to reduce the risk and impact of disasters and emergencies and are typically developed at the state and local levels.

Key Planning Documents for CM/Disaster Planning

6. **Continuity of Operations Plans (COOPs):** COOPs provide guidance on how government agencies and organizations will maintain essential functions and services during and after disasters and emergencies.
7. **Public Health Emergency Plans:** These plans outline how public health agencies and organizations will respond to public health emergencies, such as pandemics or bioterrorism incidents.
8. **Evacuation Plans:** Evacuation plans outline how communities will evacuate residents during disasters and emergencies, and typically include transportation plans, shelter plans, and other key elements.
9. **Emergency Operations Center (EOC) Standard Operating Procedures (SOPs):** EOC SOPs provide guidance on how EOCs will operate during disasters and emergencies, including how information will be collected, analyzed, and disseminated.

Note: These are just a few examples of the key supporting government documents that may be needed to execute disaster planning. The specific documents required will depend on the type of disaster or emergency, the jurisdiction involved, and other factors.

National Response Framework Emergency Support Function (ESF) Annexes

There are 15 **Emergency Support Function** annexes in the **National Response Framework (NRF)**. The ESF annexes are designed to provide a template of requirements and responsibilities for all CM and disaster planning activities.

The **ESF** annexes are as follows:

1. Transportation
 2. Communications
 3. Public Works and Engineering
 4. Firefighting
 5. Emergency Management
 6. Mass Care, Emergency Assistance, Housing, and Human Services
 7. Logistics Management and Resource Support
 8. Public Health and Medical Services
 9. Search and Rescue
 10. Oil and Hazardous Materials Response
 11. Agriculture and Natural Resources
 12. Energy
 13. Public Safety and Security
 14. Long-Term Community Recovery
 15. External Affairs
- Each of these annexes outlines specific roles and responsibilities, actions, and support structures for coordinating and implementing response efforts in a particular functional area during an incident or event.

National Incident Management System (NIMS)

The National Incident Management System is supported by a number of key documents, including:

1. **NIMS Doctrine:** The NIMS Doctrine provides the overarching principles, concepts, and policies for NIMS.
2. **NIMS Implementation Guidance:** The NIMS Implementation Guidance provides detailed guidance on how to implement NIMS.
3. **NIMS Training Program:** The NIMS Training Program provides training and education on NIMS for all levels of government, private sector, and non-governmental organizations.
4. **NIMS Resource Management:** The NIMS Resource Management provides guidance on how to manage resources during incidents, including how to track, order, and deploy resources.

National Incident Management System (NIMS)

5. **NIMS Communications and Information Management:** The NIMS Communications and Information Management provides guidance on how to establish and maintain communications during incidents, including how to collect, process, and disseminate information.
6. **NIMS Support Annexes:** The NIMS Support Annexes provide specific guidance on how to implement NIMS for different types of incidents, such as hurricanes, earthquakes, or terrorist incidents.
7. **Incident Command System (ICS):** ICS is a key component of NIMS and provides a standardized approach for managing incidents. The ICS is supported by a variety of documents, including the ICS Forms, ICS Position Descriptions, and ICS Training Materials.

Note: These are just a few examples of the key documents supporting NIMS. The specific documents required will depend on the type of incident and the jurisdiction involved.

Emergency Federal Grant Programs

Federal grant programs are available to cover training, equipment, and manpower shortfalls for state and local emergency management agencies. These grant programs are administered by FEMA and are designed to enhance the capabilities and readiness of emergency management agencies across the country.

The main grant programs available to State and Local Governments include:

1. **Homeland Security Grant Program (HSGP):** This program provides funding to support state and local efforts to prevent, protect against, mitigate, respond to, and recover from acts of terrorism and other catastrophic events.
2. **Emergency Management Performance Grant (EMPG) Program:** This program provides funding to support the development, maintenance, and improvement of state and local emergency management capabilities.
3. **Hazard Mitigation Grant Program (HMGP):** This program provides funding to support state and local efforts to reduce the risks and impacts of natural disasters.

Emergency Federal Grant Programs

- 4. Urban Area Security Initiative (UASI) Program:** This program provides funding to support the development and implementation of regional approaches to security and preparedness in high-risk urban areas.

There are also other grant programs available that provide funding for specific areas of emergency management, such as the Fire Prevention and Safety Grant Program and the Public Assistance Program.

To access these grant programs, state and local emergency management agencies can apply through the FEMA Grants Portal (<https://portal.fema.gov/>). The application process is competitive and requires agencies to demonstrate their need for funding and their readiness to use it effectively.

Stafford Act during Crisis Events

The Stafford Act is a federal law that provides the legal framework for the federal government to provide disaster assistance to state, tribal, and local governments in response to a wide range of emergencies and disasters, including **natural disasters, acts of terrorism, and other catastrophic events**. Here are some of the key factors and support provided by the Stafford Act:

- 1. Federal Assistance:** The Stafford Act authorizes the President to declare a major disaster or emergency, which triggers federal assistance to state, tribal, and local governments to help respond to and recover from the disaster. This assistance can include financial assistance, technical support, and personnel from federal agencies such as the Federal Emergency Management Agency (FEMA), the Department of Health and Human Services (HHS), and the Department of Defense (DOD).
- 2. Funding:** The Stafford Act authorizes funding for emergency response and recovery efforts, including the Disaster Relief Fund (DRF), which is used to provide financial assistance to state, tribal, and local governments and individuals impacted by a disaster.

Stafford Act during Crisis Events

3. **Coordinated Response:** The Stafford Act requires federal agencies to coordinate their response efforts with state, tribal, and local governments, as well as with private and non-governmental organizations. This coordination ensures that resources are effectively and efficiently used, and that response efforts are aligned with the needs of impacted communities.
4. **Individual Assistance:** The Stafford Act provides for individual assistance, including financial assistance, housing assistance, and other forms of support to individuals and families impacted by a disaster.
5. **Public Assistance:** The Stafford Act provides for public assistance to state, tribal, and local governments for the repair, replacement, or restoration of public infrastructure, including roads, bridges, and public buildings.

Overall, the Stafford Act is a critical tool for facilitating a coordinated and effective response to disasters, providing critical resources and funding to support response and recovery efforts at the state, tribal, and local levels.

Federal Programs for Volunteer FDs (Train and Equip)

There are several federal programs that provide training and equipment to volunteer first responder organizations. Some examples include:

1. The Department of Homeland Security's Assistance to Firefighters Grant (**AFG**) Program provides funding to fire departments and nonaffiliated emergency medical service organizations to help with training, equipment, and other needs.
2. The Department of Homeland Security's Volunteer Fire Assistance (**VFA**) Program provides funding to help rural fire departments purchase equipment and training.
3. The Department of Homeland Security's Urban Areas Security Initiative (**UASI**) Program provides funding to high-threat, high-density urban areas for training and equipment.

Federal Programs for Volunteer FDs (Train and Equip)

4. The National Fire Academy (**NFA**) provides training to firefighters, emergency medical services personnel, and other first responders.
5. The Emergency Management Institute (**EMI**) provides training to emergency management professionals and other stakeholders.
6. The Community Emergency Response Team (**CERT**) program provides training to volunteers to help them prepare for and respond to disasters.

These programs are designed to provide resources to help volunteer first responder organizations improve their readiness and capabilities.

Welcome to your first 15-Minute
Networking Break

Exercise N Hour – Events and Drivers Overview

Event – Deliberate MHW attack takes place against a power sub-station (Truck-borne Improvised Explosive Device (IED) w/20K pounds of Homemade Explosives (HME) and 10K pounds of Mixed-Hazardous Waste)

Location – Eastern Roane and Western Anderson Counties

Primary Threats: Truck Explosion, Toxic Fumes and intense Chemical Fires threaten first responders and local communities within 1/2 Mile radius (Emergency Reference Guide (ERG) initial assessment)

Secondary Threats:

- Air, Land and Water Contamination (May require immediate “Stay in Place” orders and road network closures)
- Electrical power grid is initially disabled for Eastern Roane and Western Anderson County including portions of Oak Ridge
- Initial Cross-contamination due to vehicle traffic and personnel movements/interactions

Exercise N Hour – Events and Drivers Overview

Weather – 86% Humidity, Winds E/NE at 12-15 Knots; Probable “Area of Contamination” will include Eastern Roane, Loudon, Anderson and Western Knox Counties

Effects – Highly Toxic Fumes (Red Zone is 800 to 1200 meters from center of detonation). Fumes consist of nitrogen oxides, VOCs, polycyclic, dioxin, fumes from LIBs (CO, HF, SO₂, NO₂, NO and HCL) as well as radioactive waste particles

- All personnel entering area may face significant loss of life if not in appropriate PPE (level B) upon arrival.
- First Responder Network likely to be severely impacted.
- Evacuation of civilian populace will be required based on Down-wind-hazard report. Planners will also need to ID/develop designated Evac Routes, DECON Sites, Transfer Points, Equipment Staging Areas, Medical Holding and Treatment Stations for personnel and equipment traveling through affected area.
- Wildlife and water sources will be significantly impacted (toxic plumes and heavy metals).
- All communications (cell and responder networks) will be directly affected by power loss and potential Cyber attacks against SCADA systems.

Exercise N Hour – Events and Drivers Overview

Primary Discussion Goals for Hour One – Discuss primary assessment of MHW type event and identify Emergency Management Activities (EMA) Emergency Action Plans (EAPs) requirements and relevancy.

Key Exercise Discussion Points

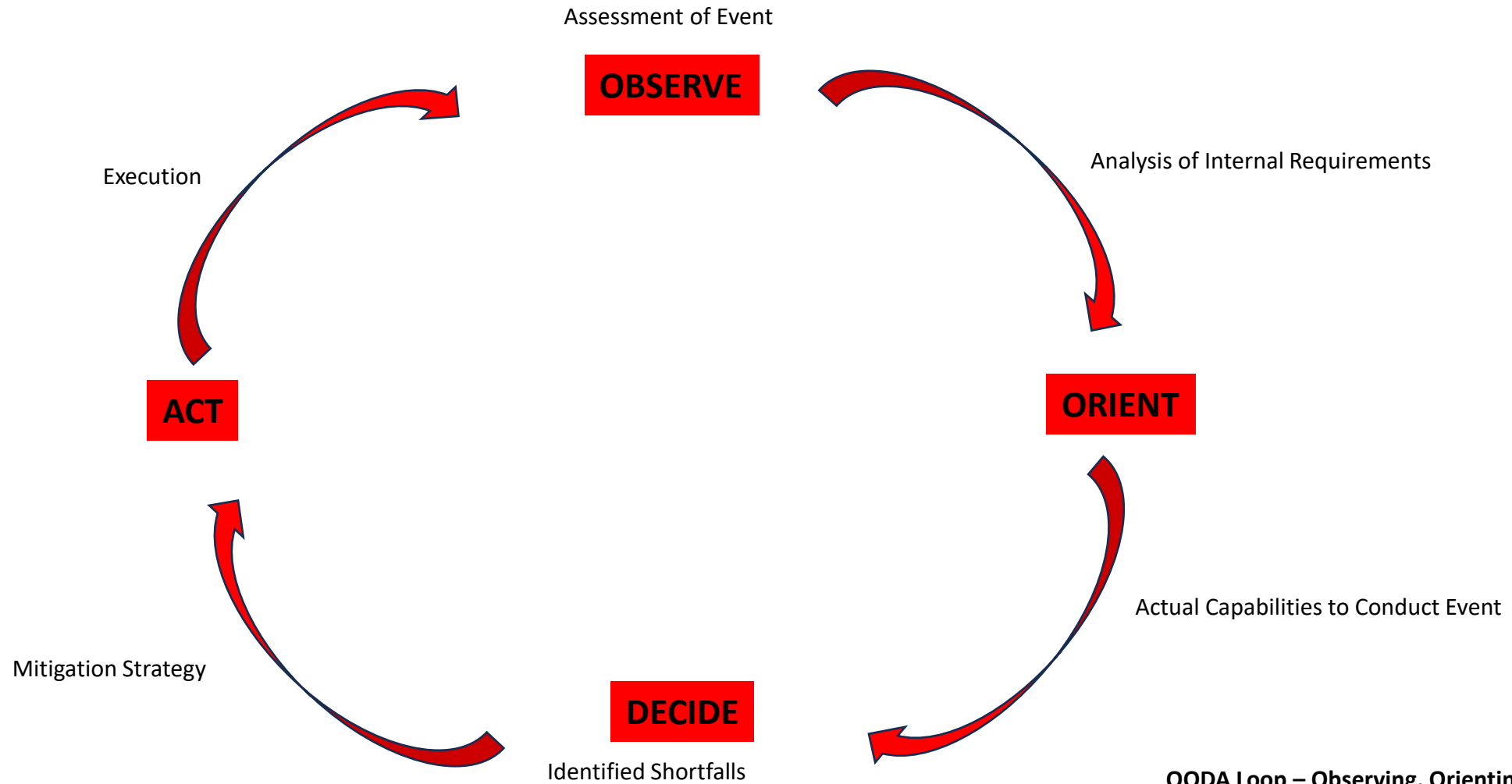
- Do EAPs exist, are they presently resourced and have they been updated and rehearsed for this type of an asymmetric event?
- Does the County EMA's possess redundant communications and NIMS trained personnel?
- Does the local Responder community have adequate HAZMAT-certified personnel (Awareness, Operations, Technicians, and Specialists) and equipment to handle a large MHW event?
- During the initial assessment and Tone-out, are the E-911 operators keyed into "request management" based on initial reporting? (Provide possible HazMat Awareness instructions).
- Does the local EMA(s) have a "Game Book" for asymmetric threats?
- Are the State and Local EMA websites, directories, and LEPCs updated regularly?
- Do the local responders have qualified organic Hazmat Awareness or Operations built into their initial response packages?

Exercise N Hour – Critical Path Analysis (Slide 2 Overview)

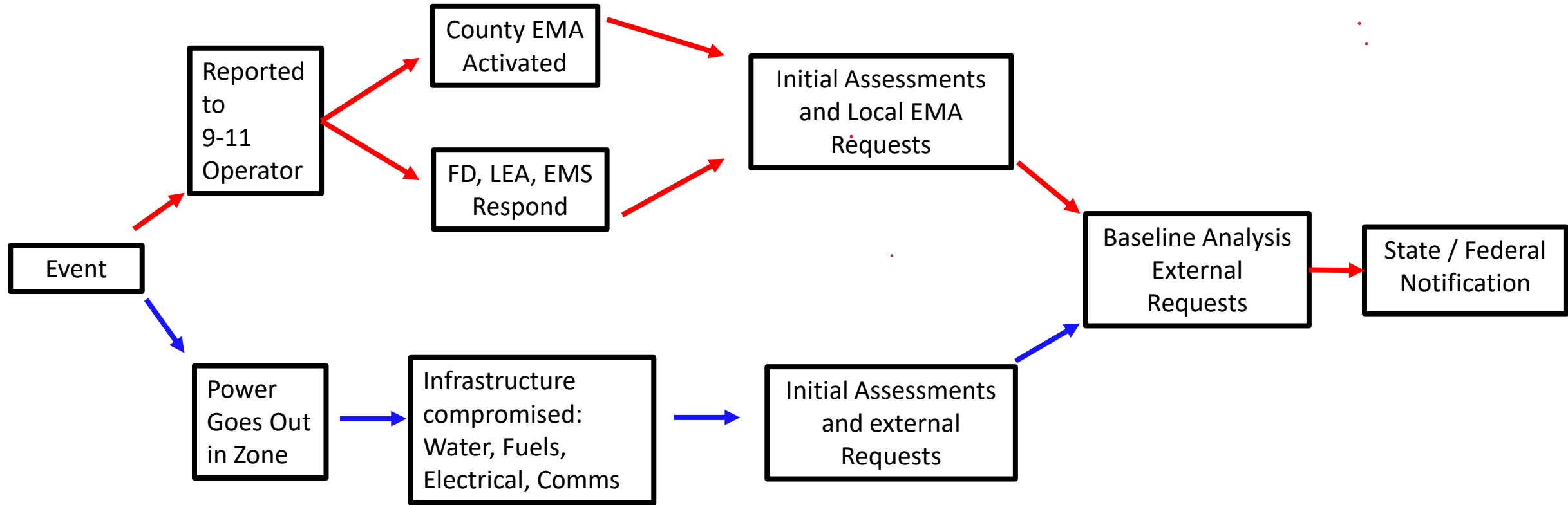
- **Critical Path Analysis - Key Analytics**
 - Has local community EMAs developed a series of integrated EAPs with the local counties and communities based on Pre-planned analyses of potential target sites?
 - Are these plans published with supporting Mutual Aid Agreements (Fire, Rescue, LEA, Medical, Evacuation, Site Survey and Recon (CBRNE) capabilities, and local support agreements with Federal Installations (ORNL, Y-12)?
 - Have individual agencies conducted combined Risk Assessments (RA) of potential key target nodes or possible emergency threats to the surrounding communities?
 - Using NIMS as the response template, do the EMA/EAPs have designated leads and communications nodes by scenario type, and has an IC lead been identified and approved?
- **Algorithm Process**
- **Open Questions Requiring Follow-up Discussions**

Exercise N Hour Critical Path Analysis (CPA)

Feeds Modeling and Analysis (MA) and Derives Requirements – IDs Shortfalls – Conducts Risk Assessment - Develops Mitigation Strategy



Exercise N Hour – Algorithm Process



Participant Scenario Template

Event: MHW Detonation/Explosion – N + 30

Organization: USNORTHCOM

CM Supporting SOPs/Policy Documents:

- CONPLAN 3500-14 (TAB C)
- CJCS CBRN Response EXORD

Actions on Event Notification:

- USNORTHCOM Joint Operations Center (JOC) is notified of the event and executes official notification procedures
- USNORTHCOM designates ARNORTH as the Joint Force Land Component Command (JFLCC)
- Joint Task Force – Civil Support (JTF-CS) receives official notification of event
- Request for Interagency LNO Augmentation

Requests for Information (from supporting organizations):

- USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS)
- State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge)

Organic Response Capabilities:

- National Guard: Tennessee Weapons of Mass Destruction – Civil Support Team (WMD-CST) activated on 3-hour recall
- LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations

External Requests for Support:

- Begin contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.)

Communications Requirements:

- Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comms Package notified for deployment

N – Hour Open Questions

Open Questions Requiring Follow-up
Discussions

Welcome to your second 15-Minute
Networking Break

N+1 Events and Drivers

Event - Deliberate MHW attack has taken place against a power sub-station (Truck-borne Improvised Explosive Device (IED) w/20K pounds of Homemade Explosives (HME) and 10K pounds of Mixed-Hazardous Waste

Location – Eastern Roane County and Western Anderson County

Primary Threats: Toxic Fumes, Secondary Explosions and Intense Chemical Fires continues to threaten First Responders and local community within a 1 Mile down wind hazard area; with plume moving to the E/NE

- Plume has expanded to the E/NE and now presents a direct threat to western Oak Ridge (City), ORNL and Y-12. (ERG data, NBC1 Report, Updated Weather Data)

Secondary Threats: Electrical power grid remains partially disabled (no power or rolling blackouts in three county area.

- Noticed interference on multiple SCADA systems within Eastern TN
- Communications networks (cellular backbone and landlines affected); Emergency Alert System (EAS) must be requested/have access to the Integrated Public Alert and Warning System (IPAWS)

Weather – 86% Humidity, Winds shifting at altitude: E/NE at 10-12 Knots; Probable areas of Contamination may include Eastern Roane, Loudon, Anderson and Western Knox Counties

N+1 Effects and Goals

Effects – Highly Toxic Fumes (Red Zone is 800 to 1200 meters from center of detonation). Fumes consist of nitrogen oxides, VOCs, polycyclic, dioxin, waste from LIBs (CO, HF, SO₂, NO₂, NO and HCL) as well as radioactive waste particles

- All personnel entering area (Red Zone) will face significant loss of life if not in appropriate PPE (Level A) upon arrival.
- Evacuation of populace will be required based on Down-Wind-Hazard Assessment. This will require designated Evac routes, DECON and Medical Stations for personnel and equipment from and/or those traveling through impacted area.
- Wildlife and water sources will be significantly impacted (toxic plumes and heavy metals).
- All communications (cell and responder networks will be directly affected) by power loss.

Primary Goals for Hour One – Refine primary assessment of event and discuss Emergency Management Activities (EMA) Emergency Action Plans (EAPs). Identify initial requests for interagency resources.

N+1 Key Discussion Points

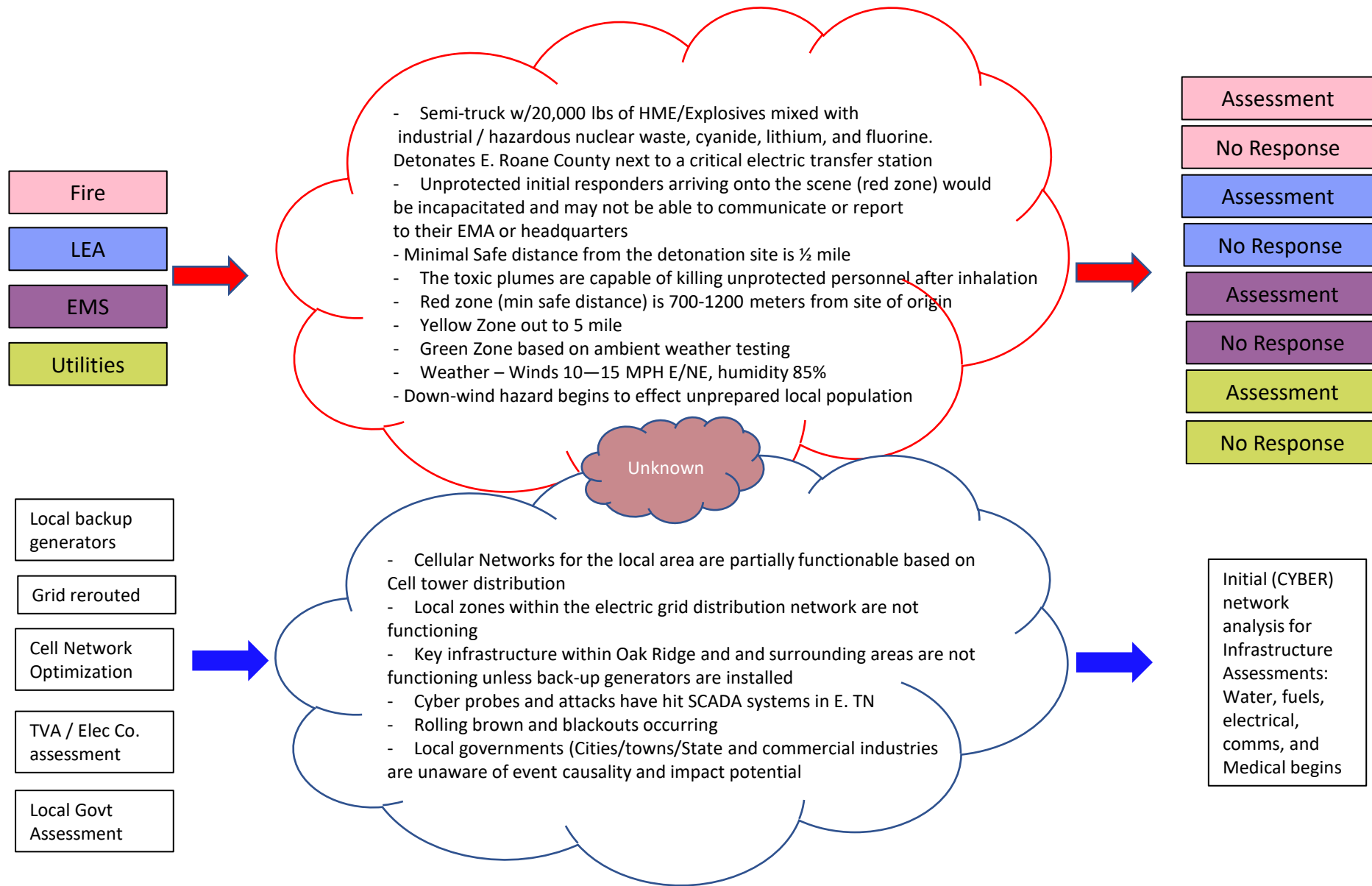
- ❑ When does the County EMA notify TEMA, and what will their initial assessment contain?
 - When will they (local) declare a state of emergency (established tripwires/protocol) and notify the Office of the Governor?
 - What are Tennessee's mechanisms and requirements for declaring a State of Emergency, and what are the precursors for requesting the Stafford Act?
 - What are the SOP/SOGs for the EMA if responders do not respond back?
- ❑ Has select National Guard CBRN Enhanced Response Force Packages (CERFPs) and Homeland Response Forces (HRFs) been notified IAW State and Regional agreements?
- ❑ Will known bifurcated/trifurcated reporting systems be established (e.g., EMA, Y-12, ORNL) and what are their coordinating mechanisms, communication mediums and priority of work? Are they presently documented within the EAP?
- ❑ During the conduct of the baseline assessment, does the county/local EMA EAP have Radiological and Chemical Survey equipment and trained personnel capable of immediate deployment into a Red Zone? If not, is there an identified lead (e.g., Knoxville FD or Rural Metro, ORNL)?

N+1 Key Discussion Points

- Does the County EMA(s) possess primary/redundant communications sufficient to cover initial mission requirements and range distances?
- Is the local EMA connected to the Wireless Emergency Networks (WEA) and have access to the Integrated Public Alert and Warning System (IPAWS)?
- Are local mobile networks capable of delivering WEA messages?
- What are the SOP/SOGs for the EMA/IATF if responders do not respond/report back from the Hazard site?
- Are there sufficient quantities of (and correctly typed) PPE locally stored for responding teams (A through D)?
- Are there established and exercised medical notification processes and capability/capacity to conduct an MHW MCI event?
- When and where is the Operations HQ or Interagency Task Force (IATF) established under NIMS and when will they be able to begin conducting full spectrum operations?
- When will the evacuate or stay in-place decision/orders be given?

Critical Path Analysis - Key Measurements

- Has the primary county EMA developed a series of integrated EAPs with the local counties, State agencies, Law Enforcement Activities (local, State and Federal), First Responders/EMS and civilian communities?
- Are these plans published with supporting Mutual Aid Agreements (Fire, Rescue, LEA, Medical, Evacuation, Site Survey and Recon capabilities), and support agreements with Federal Installations (ORNL, Y-12)?
- Have combined Risk Assessments been conducted of potential key target nodes in the surrounding communities or for potential asymmetric events?
- Using NIMS as the response template, do the EAPs have designated leads, apportioned equipment, assigned systems?
- Have communications nodes been established, tested and approved (WEA)?



Participant Scenario Template

Event: MHW Information Management Activities – N+1:30

Organization: USNORTHCOM

CM Supporting SOPs/Policy Documents:

- CONPLAN 3500-14 (TAB C)
- CJCS CBRN Response EXORD

Ongoing Actions:

- USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUSNORTHCOM
- USNORTHCOM, ARNORTH, and JTF-CS begin contingency planning as necessary
- Begin integration of Interagency LNO Augmentation

Requests for Information (from supporting organizations):

- USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS)
- State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge)

Organic Response Capabilities:

- National Guard: TN Governor initiates deployment of the 45th WMD-CST
- National Guard: Select CBRN Enhanced Response Force Packages (CERFPs) and Homeland Response Forces (HRFs) notified IAW State and Regional agreements
- LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations

External Requests for Support:

- Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.)

Communications Requirements:

- Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

N+1 Required Follow-up

Open Questions Requiring Follow-up Discussions

Welcome to your third 15-Minute
Networking Break

N+2 Events and Drivers

Event - Post MHW attack against a power sub-station (Truck Improvised Explosive Device (IED) w/20K pounds of Homemade Explosives (HME) and 10K pounds of Mixed Hazardous Waste

Location – Eastern Roane County and Western Anderson County

Primary Threats: Toxic Fumes, Secondary Explosions and Intense Chemical Fires threaten First Responders and local community within a 1 Mile area downwind of detonation site

- Plume has expanded to the E/NE and now presents a direct threat to Western Oak Ridge (City), ORNL and Y-12. (ERG data, NBC1 Report, Updated Weather Data)

Secondary Threats : Electrical power grid remains partially disabled in three county area; rolling blackouts continues.

- Increased interference on SCADA systems
- Communications networks (cellular backbone and landlines effected)
- Emergency power requirements for medical facilities effected
- Air quality and contamination of local public and government facilities
- Increased cross contamination (expanded area) due to road and river networks

Weather – 86% Humidity, Winds E/NE at 10-12 Knots; Area of Contamination may include Eastern Roane, Loudon, Anderson and Western Knox Counties

N+2 Events and Drivers

Effects – Highly Toxic Fumes (Red Zone is 800 to 1200 meters from center of detonation). Fumes consist of nitrogen oxides, VOCs, polycyclic, dioxin, waste from LIBs (CO, HF, SO₂, NO₂, NO and HCL) as well as radioactive waste particles

- All personnel entering area (Red Zone) will face significant loss of life if not in appropriate PPE (Level A) upon arrival
- Evacuation of populace will be required based on Down-Wind-Hazard Assessment. Will require designated Evac routes, DECON (individual and equipment) and Medical Stations for personnel and equipment from and traveling through impacted area.
- All personnel exiting contamination zone will require DECON and medical evaluation
- Primary Evacuation Routes identified and data released to public; all other roads (into and out of) are closed and monitored
- Wildlife and water sources will be significantly impacted (toxic plumes and heavy metals)
- All communications (cell and responder networks will be directly affected) by power loss and potential Cyber attacks against SCADA systems

Primary Goals for Hour Two – Refine primary assessment of event and review Emergency Management Activities (EMA) Emergency Action Plans (EAPs). Identify initial request for State and interagency resources

N+2 Key Discussion Points

- When does TEMA initiate their EAP/IAP and stand up their operations center, and what will their initial assessment contain?
- Are there formatted templates for requesting additional state assets to include commercial capabilities and apportioned emergency resources?
 - What are Local EMAs/TEMA's measurements and criteria to notify the Governor's Office with a recommendation to declare a state of emergency?
 - What are the State/local key planning considerations and mechanisms for requesting the Stafford Act?
 - Is the declaration of a state of emergency also the precursor to request the Stafford Act?
- Does the County EMA possess primary/redundant communications sufficient to cover initial mission requirements and range distances?
- Does the local/state EAP possess a series of Risk Assessments where:
 - 1st Responders are withdrawn from event area until "scene safe" is achieved and/or additional resources are identified and provided?
- What should be the established priorities of work?:
 - Extinguish the fire/threat?
 - Public Safety (i.e., notification, evacuation/rescue, or stay in place)?
 - Establishment of Emergency Operations Center?
 - Move your families to locations of safety; what happens when 1st Responders don't respond?

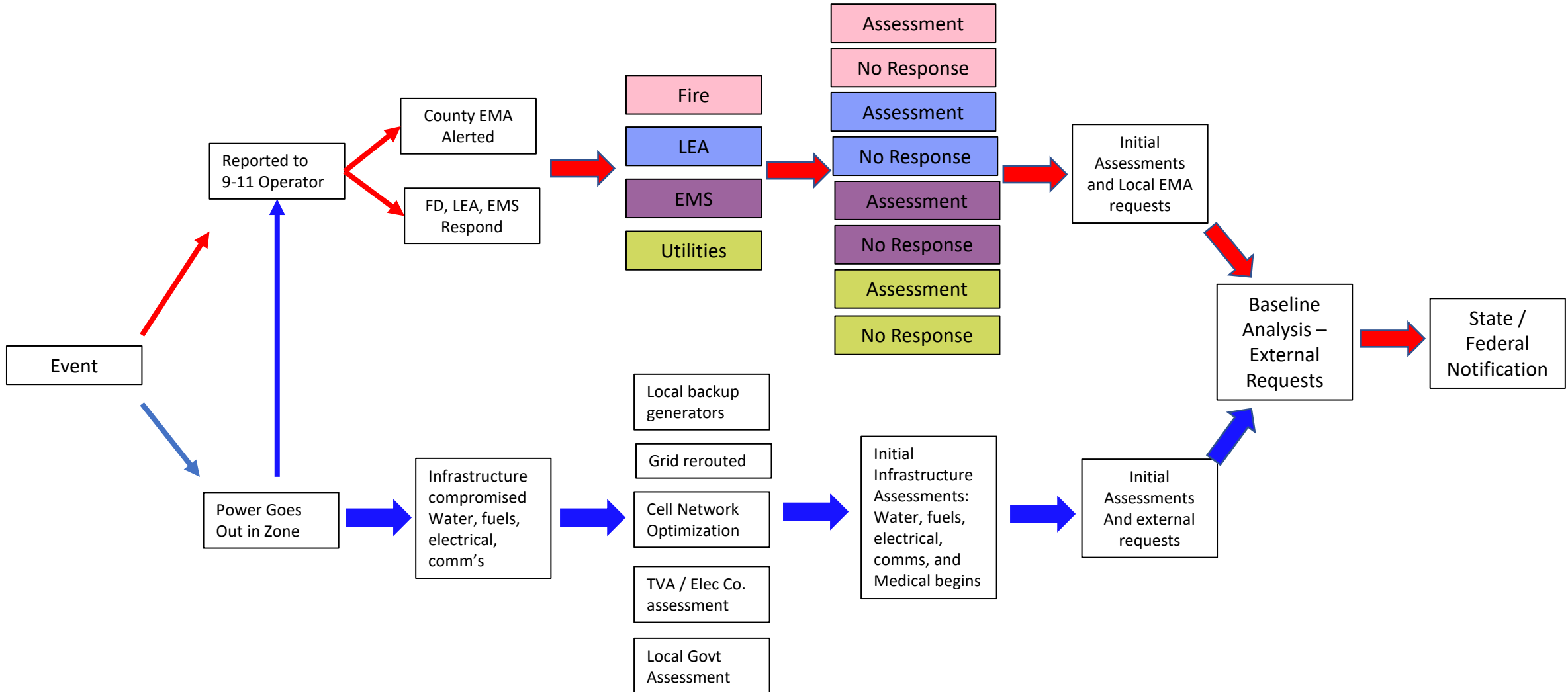
N+2 Key Discussion Points

- What are the SOP/SOGs for the EMA/IATF if initial responders don't respond/report back from the Hazard site?
- Have Zones (Red, Yellow and Green) been established on integrated and distributed on networked software systems
- Are there sufficient (and correctly typed) quantities of PPE locally stored for responding teams (A through D)?
- Are there established medical notification processes and capabilities and capacity to conduct an MHW MCI event?
- Are there sufficient Medical Transport capability to move patients inside and outside of the contaminated zone?
- When and where is the Operations HQ or Interagency Task Force (IATF) established under NIMS and when will they be able to begin conducting full spectrum operations? (Flexibility versus fixed location)
- When/have the evacuate or stay in-place orders been given? Where are they told to go?

N+2 Critical Path Analysis – Key Measurements

- Has the primary county EMA and TEMA activated/requested for additional local counties, State agencies, Law Enforcement Activities ((LEA) local, State and Federal), First Responders/EMS and civilian communities?
- Are these plans published with supporting Mutual Aid Agreements (Fire, Rescue, LEA, Medical, Evacuation, Site Survey and Recon capabilities), and support agreements with Federal Installations (ORNL, Y-12)?
- Have combined Risk Assessments been conducted of potential key target nodes in the surrounding communities or for potential asymmetric events?
- Depending on the type of event (deliberate MHW attack, but unknown), coupled with various CYBER events occurring within the region:
 - Will the Governor increase the security posture for the state and what are those implications?, or
 - Will the Federal government increase the security posture for the region and what are those implications for the event and local communities?

Event to Federal



Participant Scenario Template

Event: MHW Verification - Hour Two

Organization: USNORTHCOM

CM Supporting SOPs/Policy Documents:

- CONPLAN 3500-14 (TAB C)
- CJCS CBRN Response EXORD

Ongoing Actions:

- USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUSNORTHCOM
- CDRUSNORTHCOM initiates changes to DoD CBRN Response Posture Levels (CRPLs) as necessary
- USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary
- Begin integration of Interagency LNO Augmentation

Requests for Information (from supporting organizations):

- USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS)
- State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge)

Organic Response Capabilities:

- National Guard: 45th WMD-CST deploys at N+3 hours
- LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations

External Requests for Support:

- Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.)

Communications Requirements:

- Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

N+2 Required Follow-Up

Open Questions Requiring Follow-up
Discussions

Welcome to another 15-Minute
Networking Break

N+3 Events and Drivers (Overview)

Event(s): Deliberate MHW attack takes place against a power sub-station (Truck Improvised Explosive Device (IED))
The targeted site continues to burn. CYBER attacks conducted against infrastructure to include hospital ransom ware are being reported into the IAJTF

Location: Eastern Roane County, Anderson, Knox, Loudon

Primary Threats: Toxic Fumes, Secondary Explosions and Intense Chemical Fires threaten First Responders and local community within a 3 miles area with plume moving to the E/NE

- Plume has expanded to the E/NE and beginning to affect sections of western Oak Ridge (City), ORNL and Y-12 and outlying communities. (ERG data, NBC1 Report, Updated Weather Data)

Secondary Threats: Electrical power grid remains partially disabled in three county area; rolling blackouts continue.

- DOE/FBI/TBI identified deliberate SCADA attack against key systems; Attacker(s) remains unknown.
- Disinformation and panic spreading throughout Eastern TN. Hostile propaganda, misinformation being spread using social media and international press.
- Civilians departing in all directions from event with cross contamination

Weather: 86% Humidity, Winds E/NE at 10-12 Knots. Area of Contamination may include Eastern Roane, Loudon, Anderson and Western Knox Counties

N+3 Events and Drivers (Overview)

Effects – Highly Toxic Fumes (Red Zone is 1500 meters from center of detonation). Fumes consist of nitrogen oxides, VOCs, polycyclic, dioxin, waste from LIBs (CO, HF, SO₂, NO₂, NO and HCL) as well as radioactive waste particles

- All personnel entering area face significant loss of life if not in appropriate PPE upon arrival.
- Notifications calls of personnel and wildlife deaths are being received through and stressing the E-911 network.
- Evacuation of populace is required based on Down-Wind-Hazard Assessment. It will require:
 - Notification/Evacuation processes be executed
 - Designated Evac routes established; alternate routes are closed
 - DECON station and personnel and equipment holding areas established
 - Medical Stations for personnel and equipment from and traveling through impacted area.
 - Medical transport (clean) to non-contaminated facilities
- Wildlife, land and water sources significantly impacted (toxic plumes and heavy metals).
- All communications (cell and responder networks will be directly affected) by power loss and ongoing Cyber attacks against SCADA systems.

N+3 Key Discussion Points

Primary Goals for Hour Three: Refine primary assessment of event and review Emergency Management Activities (EMA) Emergency Action Plans (EAPs), State(s) Assistance Plans.

Key Discussion Points:

- What guidance and resources does TEMA provide to the local EMA within Hour 2; what instructions do they provide to the Governor? What is their priority of work?
- Has the Governor Declared a State of Emergency?
 - Has he requested Federal assistance?
 - Has he activated the Tennessee National Guard?
 - Has the National Guard Bureau's 45th WMD-CST been notified for deployment?
 - Has NGB (CBRNE Enhanced Response Force Packages (CERFPs) and Homeland Response Force (HRFs) alert, mobilization and deployment begins (if necessary) at direction of State Governors?
 - Has TEMA/Governor's office stood up a Consequence Management (CM) Task Force?
 - Has he requested invocation of the Stafford Act?

N+3 Key Discussion Points

- Communications networks (cellular backbone and landlines affected); Emergency Alert System (EAS) must have been requested/have access to the Integrated Public Alert and Warning System (IPAWS)
- Does the organic EMA/TEMA communications networks operate as intended?
- Are requests by the local EMAs and TEMA being met from external assistance?
 - Has additional HAZMAT assets been requested (local, private, state and federal)?
 - Are established medical notification processes being executed and do they have the capability/capacity to conduct an MHW MCI across county lines?
 - Where is the Operational HQ (CMTF) and their NIMS IC fully established and capable of executing complex tasks in a multi-spectral environment?

N+3 Critical Path Analysis

- Has the primary county EMA developed a series of integrated EAPs and Incident Action Plans (IAP) with the surrounding local counties, State agencies, Law Enforcement Activities ((LEA) local, State and Federal), First Responders/EMS and civilian communities?
- Are these plans published with supporting Mutual Aid Agreements (Fire, Rescue, LEA, Medical, Evacuation, Site Survey and Recon capabilities), and support agreements with Federal Installations (ORNL, Y-12)?
- Have these EAPs been exercised within the previous twelve (12) months, and are they including high risk target nodes and asymmetric threats during their combined Risk Assessments (RA)?
- Have the local EMAs and TEMA rehearsed in the previous twelve (12) months their NIMS-directed Command and Control (C2) organizational structure, functions and conducted a functional inventory of assets?

- Fire Assessment
- No Response
- LEA Assessment
- No Response
- EMS Assessment
- No Response
- Infra Assessment
- No Response

Initial (CYBER) network analysis for Infrastructure Assessments: Water, fuels, electrical, comms, and Medical begins

- **Initial reports begin coming in to 911; County EMA Activated**
- Who and What variables are required to stand-up a Task Force (TF) under the National Incident Management System (NIMS)
 - Are there designated trained personnel to fill out and operate the various components (Command and Management, Preparedness, Resource Management, Communications and Information Support, Supporting Technologies, and Ongoing Management and Maintenance
 - Is there a pre-designated Incident Commander (IC) from the County(ies)
- Is the local EMA staffed and organized to handle this type of event; with approved and resourced Emergency Action Plans (EAP)?
- Are they resourced with adequate PPE with trained teams capable of conducting site survey?
- When does the local government notify the State (TEMA) or Governor's Office and request assistance or declare a State of Emergency?
- Does the County EMA have existing Mutual Aid agreements with organic and surrounding counties
- Does the County EMA have redundant communications and alert procedures for the local governments
- Is there a formal evacuation process for civilians that has been exercised?
- Notification process for local hospitals
- What is the approved process for declaring a State of Emergency
- Does the NIMS organization include the commercial infrastructure leadership as well as local Federal activities (ORNL, Y-12)
 - What is the interface between the Local Government and local Federal activities?
 - What is the interface between Local government and commercial industries?

Actions at the Local Level:

Actions at the State Level:

Actions at the National Level:

Participant Scenario Template

Event: MHW Agency Response - Hour Three

Organization: USNORTHCOM

CM Supporting SOPs/Policy Documents:

- CONPLAN 3500-14 (TAB C)
- CJCS CBRN Response EXORD

Ongoing Actions:

- USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUSNORTHCOM
- USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary
- USNORTHCOM notification to the Defense CBRN Response Force (DCRF) as necessary
- Begin integration of Interagency LNO Augmentation

Requests for Information (from supporting organizations):

- USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS)
- State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge)

Organic Response Capabilities:

- National Guard: 45th WMD-CST begins arriving at incident location and reports to the Incident Commander (IC)
- National Guard: CERFPs and HRFs mobilization begins (if necessary) at direction of State Governors
- LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations

External Requests for Support:

- Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.)

Communications Requirements:

- Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

N+3 Required Follow-Up

Open Questions Requiring Follow-up
Discussions

Welcome to a 15-Minute
Networking Break

N+4 Events and Drivers

Event – Deliberate MHW attack (explosion) takes place against a power sub-station (Truck IED w/10K HME and 10K MHW)

The detonation site continues to burn. CYBER attacks effect C2 operations.

Location of Detonation – Eastern Roane

Primary Threats: Toxic Fumes and intense chemical fires continue to burn; down wind hazard report requires evacuation out to 12 (ten) miles from point of detonation.

- Plume has expanded to the E/NE and continues to threaten Oak Ridge (City), ORNL and Y-12 and the surrounding communities in Roane, Anderson, Knox and Union Counties.
- Unprotected humans and wildlife and domestic effected, water contamination may become critical.

Secondary Effects: Electrical power grid remains partially disabled for Eastern Roane, Anderson and NW Loudon County including the city of Oak Ridge.

- Confirmed SCADA attacks against power infrastructure and communications systems.
- Key nodal systems (e.g., power, water, communications, traffic, fuel distribution) remain unreliable.
- Localized CYBER attacks and ransom wear hit hospitals in Eastern TN.

Weather – 92% Humidity, Winds E/NE at 10-12 Knots; Area of Contamination include Eastern Roane, NE Loudon, Anderson and Western Knox Counties

N+4 Events and Drivers

Effects – Highly Toxic Fumes (Red Zone is 800 to 1200 meters from center of detonation). Fumes consist of nitrogen oxides, VOCs, polycyclic, dioxin, waste from LIBs (CO, HF, SO₂, NO₂, NO and HCL) as well as radioactive waste particles

- All personnel entering Red Zone face significant loss of life if not in PPE upon arrival to scene.
- Multiple civilians calling E-911 complaining about dizziness, vomiting, headaches and difficulty breathing. First reports of civilian deaths, birds and livestock.
- Do the EAPs call for the identification and propositioning of portable coolers (Semi-trailers) for morgues.
- Wildlife in zone will be significantly impacted; is there a plan to treat or kill and dispose of contaminated wildlife and farm animals.
- Water contamination will affect multiple states if not locally contained. What are the U.S. Army Corps of Engineers and EPA's mitigation strategy for the Tennessee River System?
- Possibly all communications (cell and responder networks will be remain affected) by power loss and potential Cyber attacks against SCADA systems.
- Disinformation will cause public panic (internal and external).

N+4 Primary Goals

Primary Goals for Hour Four: WHAT Federal and State agencies are participating and HOW are they operating?

Key Discussion Points:

- Will Martial Law be established to control the event?
- Who become the NIMS IATF lead during initial operations (DOJ or TEMA or FEMA or EPA or ARNORTH). Can the IATF have a bifurcated lead or have phases where transitional lead occurs (e.g., save lives, assessment, evacuation, transport, DECON; Criminal Investigation, Environmental Investigation/Impact and Clean-up)?
- Has JTF Civil Support (JTF-CS) (USNORTHCOM) received “prepare to deploy orders” (PTDO); has Defense Support to Civil Authorities (DSCA) support been requested? Has the Governor requested Federal assistance?
- Have additional NGB Civil Support Teams – Title 32 AGR (PDD39) been requested?
- Does the State or IATF have prepared public information campaigns and are they prepared to counter Belligerent State Disinformation/Misinformation campaigns of Social Media designed to discredit Local/State, Private and Federal government programs and Safety records
- Communications networks (cellular backbone and landlines affected); Emergency Alert System (EAS) must have been requested/have access to the Integrated Public Alert and Warning System (IPAWS)?
 - Does the organic EMA communications work as intended?
 - Are their requests for external assistance being met?
- Are established medical decontamination, evacuation and treatment processes effective to conduct an MHW MCI being executed? What will be their key shortfalls?
- Has the State requested Displaced Civilian Camp packages from FEMA to assist if a mandatory evacuation is required?

N+4 Key Discussion Points

- When will the U.S. Army Corps of Engineers deploy to the scene? Will they assume command for all waterways and mediation over TVA and EPA?
- Will the water treatment plants in the potential area of contamination stay closed until assessments are completed and EPA rendered safe?
- Will agricultural products in the zone of contamination be tested and then destroyed?
- Will contaminated wildlife and livestock be destroyed?
- What will be the magnitude of Deconning local commercial and residential areas?
- Will the Department of Health and the CDC, in conjunction with other USG Agencies, establish a multi-year human monitoring system?
- What are the short-term and long-term health effects on the local population?
- What other Federal resources are required and what additional considerations needs to be addressed?
- Where are the civilian personnel evacuated to, and how are they held until given approval to depart scene.
- Where are the patients being treated held until they are decontaminated?
- Where are the civilian's personal property (cars, pets) held until they are decontaminated?
- Has the State EAP alerted all County EMS and State Agencies (e.g., THP, TBI, DOT, DoH) and civilian resources (Hospitals, Ambulance Companies, Red Cross, Transport and Bus Companies) to assist in CM/DA?

N+4 Critical Path Analysis - Key Measurements

- Is the NIMS process functioning effectively in identifying shortfalls, hazards and threat mitigation?
- When can the State effectively plan or receiving Federal resources and capabilities (12, 24, 48 or 72 hours)?
- How long will the investigation take, and what planning mechanisms exists to ensure SAR, Evacuation, DECON, Relocation, Treatment and Clean-up is unimpeded?
- Will Martial Law exist for the effected “Zones of Contamination,” and will the US Threat Posture be affected?
- Will Posse Comitatus be in effect (Use of Active-Duty Forces in CONUS)?
- Will ARNORTH become the Executive Agent for Consequence Management and Crisis Mitigation?

Algorithm Continued: Actions at Multiple Levels

Actions at the Local Level:

- Does the local EMA formally notify the State of an unmeasured, undeterminable or significantly dangerous event
- Does the local EMA/Community declare a State of Emergency
- Does the local EMA/Community establish an IC under the NIMS Construct
- Is the local EMA/community capable of communicating with organic responders
- Is the local EMA/community capable of communicating with External and Higher responders
- Is the local EMA/community capable of initiating either a stay in place or evacuation order
- Is the local EMA/community capable of conducting local and multiple MCI's
- Is the local EMA/community capable of conducting local CBRNE Surveys and DECON
- Has the local EMA requested Mutual Aid from the surrounding areas and Counties

Actions at the State Level:

- Is the State aware of the potential magnitude of the event and resources required
- Has the State established a Crisis Action Team (CAT) and begun executing their EAPs
- Has the Governors office declared a State of Emergency
- Has Title 32 been initiated for CSU and CRTs response
- Has the State initiated the stand up of a Consequence Management Task Force or IATF
- Are additional communications packages being allocated to the disaster area

Actions at the National Level:

- Are Federal Authorities notified of the event
- Has the Stafford Act been approved
- Have Federal Agencies begun arriving at scene
- Are Select DoD forces alerted and deploying to scene (NGB, USSOCOM)
- Are emergency communications networks deploying to supporting locations
- Have the Defense Support of Civil Authorities (DSCA) operational networks been activated (USAR)
 - Have DoD select active forces been issued a warning order for potential support (CBRNE, Medical, Transportation, Logistics, Security, Aviation, Engineers, Civil Affairs, Public Information)

Participant Scenario Template

Event: Hazardous Waste Commercial Fire (Lithium Storage) - Hour Four

Organization: USNORTHCOM

CM Supporting SOPs/Policy Documents:

- CONPLAN 3500-14 (TAB C)
- CJCS CBRN Response EXORD

Ongoing Actions:

- USNORTHCOM Joint Operations Center (JOC) maintains situational awareness to advise CDRUSNORTHCOM
- USNORTHCOM, ARNORTH, and JTF-CS continue contingency planning as necessary
- DCRF is alerted, begins mobilization, and prepares to deploy as directed by CDRUSNORTHCOM
- Begin integration of Interagency LNO Augmentation

Requests for Information (from supporting organizations):

- USG (e.g., FEMA, NRC, DoJ, DoE, EPA, DoHHS)
- State and Commercial (e.g., TEMA, TG AG, TVA, City of Oak Ridge)

Organic Response Capabilities:

- National Guard: 45th WMD-CST begins conducting detection and survey activities at incident location and advises IC
- National Guard: CERFPs and HRFs mobilization continues (if necessary) at direction of State Governors
- LNO teams alerted, mobilized and preparing to deploy to supported/requesting agencies/locations

External Requests for Support:

- Continue contingency planning in anticipation of requests for support from Lead Federal Agency (DoD CBRN Response Enterprise, Defense Support of Civil Authorities (DSCA) EXORD forces, etc.)

Communications Requirements:

- Emergency Broadcast System, FEMA FirstNet, Commercial cellular QOS to responders, Organic Comm's Package notified for deployment

N+4 Required Follow-Up

Open Questions Requiring Follow-up
Discussions

Welcome to a 15-Minute Networking Break

N+5 Events and Drivers

Event – Deliberate MHW attack (explosion) takes place against a power sub-station (Truck IED w/20K HME and 10K MHW). **Fire continues to Burn.**

Detonation Location – Eastern Roane County

Primary Threats: Toxic Fumes and intense chemical fires **continue to burn**; down wind hazard report requires evacuation out to **15 (Fifteen)** miles from point of detonation.

- Plume has expanded to the E/NE and now over Oak Ridge (City), ORNL and Y-12 and continuing to expand to the NE.
- Chaos begins erupting in effected areas

Secondary Effects: Electrical power grid remains partially disabled for Eastern Roane, NW Loudon County and Western Anderson County including portions of Oak Ridge.

- Confirmed SCADA attacks against power infrastructure and communications systems.
- Localized CYBER attacks and ransomware hit hospitals in Eastern TN.

Weather – **92%** Humidity, Winds E at 10-12 Knots; Area of Contamination include Eastern Roane, NE Loudon, Anderson and Western Knox, and Union Counties

N+5 Events and Drivers

Effects – Highly Toxic Fumes (Red Zone is 800 to 1200 meters from center of detonation). Fumes consist of nitrogen oxides, VOCs, polycyclic, dioxin, waste from LIBs (CO, HF, SO₂, NO₂, NO and HCL) as well as radioactive waste particles. **Fire continues to burn!**

- All personnel entering Red Zone face significant loss of life if not in appropriate PPE upon arrival to scene.
- Multiple civilians calling E-911 complaining about dizziness, vomiting, headaches and difficulty breathing. Reports of civilian deaths, wild-life and livestock; do existing plans identify specific annexes and resources to deal with this event?
- Wildlife in zone will be significantly impacted; is there a plan to treat or kill contaminated wildlife?
- Water contamination will possibly affect multiple states. Are Mitigation Plans and Public Service Announcements being addressed to the effected population?
- Communications and Networks directly affected by power loss and Cyber attacks against multiple SCADA systems (Fuels, Water, Electricity, Automation), as well as C2 Nodes (TEMA/FEMA sites) and commercial Social Media Platforms.
- Disinformation, Misinformation and Hostile Propaganda Campaigns being conducted on Social Media as well as International News Programming. Nationwide panic begins primarily due to lack of information.

N+5 Key Discussion Points

Primary Goals for Hour Five: What Federal and State agencies are on-scene and How are they operating?

Key Discussion Points:

- How will the JIATF be constructed? Where will its location be placed? Will DOJ become the lead agency while ARNORTH becomes the Executive Agent?
- At what point are Federal resources identified and begin to move?
- Has JTF Civil Support (JTF-CS) (USNORTHCOM) transferred LNO teams and will their JTF-CS begin prepping for movement. Are they requesting additional DoD Assets (NGA Multi-spectral aircraft; has Defense Support to Civil Authorities (DSCA) support been approved? Have additional NGB Civil Support Teams – Title 32 AGR (PDD39) been requested?
- Does the State or IATF begin conducting local/State/Federal and International Public Information Campaigns concerning the event. Have Military Information Support Teams and DoS PA/PD assets been requested to counter Belligerent State Disinformation/Misinformation campaigns on Social Media?
- Communications networks (cellular backbone and landlines affected); Emergency Alert System (EAS) must have been requested/have access to the Integrated Public Alert and Warning System (IPAWS)?
 - Is FEMA moving in their 1st Net Equipment to Augment State Capabilities; what is their estimated arrival and functional timeline?
 - Will DoD be requested to assist in providing communications assets as well as Satellite Backhaul?
- Are established medical notification processes and capability/capacity being safely executed? Are they prepared for large scale contaminated patients?
- Has the State requested Displaced Civilian Camp packages from FEMA? Do they exist and what is the timeline for setting them up?

N+5, or, “What Now, Batman?”

- Are we ready for a MHW event?
- Have we placed sufficient intellectual rigor into our planning processes?
- Do we understand our weaknesses, capabilities and strengths within each layer of our organization?
- Do we know who to call when it happens, and what they bring to the table?
- What can we do to improve support our communities?

“Processes that Shaped this Event”

- **Presidential Policy Directive / PDD 68 National Preparedness**

- **The National Preparedness System (Six Parts)**
 - Identifying and Assessing Risks
 - Estimating Capability Requirements
 - Building and Sustaining Capabilities
 - Planning to Deliver Capabilities
 - Validating Capabilities
 - Reviewing and Updating

- **The National Planning Framework - six preparedness mission areas:**
 - National Prevention Framework
 - National Mitigation Framework
 - National Disaster Recovery Framework
 - National Protection Framework
 - National Response Framework

“Processes that Shaped this Event”

The *National Planning System* provides a unified approach and common terminology to plan for all-threats and hazards, and across all mission areas of Prevention, Protection, Mitigation, Response, and Recovery.

The *Planning Architecture*, which describes the strategic, operational, and tactical levels of planning and planning integration; which include:

- *Strategic-level* planning sets the context and expectations for operational planning;
- *Operational-level* planning provides the tasks and resources needed to execute the strategy; and
- *Tactical-level* planning shows how to apply resources in order to complete the operational tasks within a given timeframe.

“Processes that Shaped this Event”

The ***Planning Process***, which describes the steps necessary to develop a comprehensive plan, from forming a team to implementing the plan:

1. Form a Collaborative Planning Cell
2. Understand the Situation
3. Determine Goals and Objectives
4. Plan Development
5. Plan Preparation, Review and Approval
6. Plan Implementation and Maintenance

“Processes that Shaped this Event”

National Incident Management System: NIMS guides all levels of government, nongovernmental organizations (NGO), and the private sector to work together to prevent, protect against, mitigate, respond to, and recover from incidents. The document is organized into three major components:

- Resource Management
- Command and Coordination
- Communications and Information Management

NIMS Key Terms:

- 1. Area Command:** When very complex incidents, or multiple concurrent smaller incidents, require the establishment of multiple ICS organizations, an Area Command can be established to oversee their management and prioritize scarce resources among the incidents. Due to the scope of incidents involving Area Commands and the likelihood of cross-jurisdictional operations, Area Commands are frequently established as Unified Area Commands, working under the same principles as a Unified Command.
- 2. Authority Having Jurisdiction:** The Authority Having Jurisdiction (AHJ) is an entity that can create and administer processes to qualify, certify, and credential personnel for incident-related positions. AHJs include state, tribal, or Federal government departments and agencies, training commissions, NGOs, or companies, as well as local organizations such as police, fire, public health, or public works departments.
- 3. Emergency Operations Center:** An EOC is a facility from which staff provide information management, resource allocation and tracking, and/or advanced planning support to personnel on scene or at other EOCs (e.g., a state center supporting a local center).

“Processes that Shaped this Event”

NIMS Key Terms (Continued):

4. **Incident Commander:** The Incident Commander is the individual responsible for on-scene incident activities, including developing incident objectives and ordering and releasing resources. The Incident Commander has overall authority and responsibility for conducting incident operations.
5. **Multiagency Coordination Group:** MAC Groups, sometimes called policy groups, typically consist of agency administrators or executives from organizations or their designees. MAC Groups provide policy guidance to incident personnel, support resource prioritization and allocation, and enable decision making among elected and appointed officials and senior executives in other organizations as well as those directly responsible for incident management.
6. **Unified Command:** When more than one agency has incident jurisdiction, or when incidents cross political jurisdictions, the use of Unified Command enables multiple organizations to perform the functions of the Incident Commander jointly. Each participating partner maintains authority, responsibility, and accountability for its personnel and other resources while jointly managing and directing incident activities through the establishment of a common set of incident objectives, strategies, and a single Incident Action Plan (IAP).

“Processes that Shaped this Event”

❖ Day Two Closing Comments

- Thank you for your participation today! These discussions provide important insight into capability development and your planning considerations.
- Please be prepared to present your key comments and discuss any “Lessons Learned” tomorrow morning.
- Hopefully, today’s review of a MHW event’s planning considerations has been thought-provoking, and identified either key planning or potential shortfalls that need to be addressed during your EAP/IAP review processes.
- See you tomorrow.