**ATTACHMENT**
**CISR INCIDENT MANAGEMENT EXERCISE**
**HURRICANE SCENARIO**

## MODULE 1: PRE-SEASON

### 1. Scenario Build

- The Atlantic hurricane season extends from June 1st through November 30th each year, with the peak hurricane threat extending from mid-August to late October. Annually, an average of 11 tropical storms develops in the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico, six of which typically become hurricanes. This year's hurricane season is expected to be particularly active. The National Hurricane Center (NHC) is predicting 12-18 named storms, 6-8 hurricanes, and 2-3 major hurricanes. In comparison, the NHC's historical averages from 1966-2009 are 11.3 named storms, 6.2 hurricanes, and 2.3 major hurricanes.

- While hurricanes and their accompanying storm surges pose the greatest threat to life and property, tropical depressions and tropical storms can also be devastating. In addition, storm surge can account for a large number of casualties and personal property damage. Flooding resulting from storm surge or heavy rains and severe weather, such as tornadoes, can also cause loss of life and extensive damage.

- Preparation for, response to, recovery from, and mitigation against hurricanes require a coordinated response involving Federal, State, local, and tribal governments, the private sector, and nongovernmental organizations. This in-classroom exercise will be focused on the coordinated actions of the critical infrastructure community in preparation for and response to a generalized hurricane threat as well as a specific catastrophic storm.

### 2. Discussion Questions

How do the various critical infrastructure protection and resilience public and private sector partners prepare jointly and coordinate with each other prior to the onset of hurricane season each year? What form does this coordination take? How does the agency/organization that you represent fit into this scheme?

- Is your organization/entity a participant in locally-based NIMS structures?
- What types of analytical products, storm forecasts, best practices information, etc., are available to help guide critical infrastructure protection and resilience partner hurricane preparedness and planning activities? How is this information communicated within the NIPP framework?
- What types of assistance can the National Infrastructure Simulation and Analysis Center provide State and local agencies and the private sector prior to the onset of hurricane season?
- What are the most significant concerns of the agency/organization that you represent at this stage of hurricane season?

## MODULE 2: PRE-LANDFALL (H-HOUR)

### 1. Scenario Build

- At the end of August, a tropical disturbance formed off the coast of Africa. On September 1st, the tropical disturbance was designated as Tropical Storm Heidi, located west of the Cape Verde Islands. During the next few days, Heidi continued to strengthen and was officially designated a hurricane on September 2nd. By the early morning hours of September 4th, Heidi was upgraded to a major hurricane with sustained winds of 115mph based on aircraft reports and satellite imagery. Heidi passed near the Turks and Caicos Islands as a Category 3 hurricane on September 7th, with sustained winds of more than 120mph and entered the Gulf of Mexico on September 9th with little change in strength. The governors of Texas and Louisiana and big city mayors across the region plan to announce mandatory evacuations of citizens. Both State governors declare major emergencies and request Federal assistance. Initial Federal emergency equipment and supply caches are moved to forward staging areas outside the projected hurricane impact zone.

### 2. Discussion Questions

- What actions does the organization/entity that you represent take at the 48 hours prior to landfall decision point? At 24 hours? At 12 hours?
- What are the principal concerns of the agency/organization that you represent at this stage? What are your information sharing priorities?
- How do the various critical infrastructure protection and resilience public and private sector partners coordinate with each other and maintain a common situational awareness prior to hurricane landfall? What form does this coordination take? How does the agency/organization that you represent fit into this scheme?
- What types of analytical products, storm forecasts, best practices information, etc., are available to help guide critical infrastructure protection and resilience partner actions at this stage? How is this information communicated within the NIPP framework?
- What types of assistance can the National Infrastructure Simulation and Analysis Center provide State and local agencies and the private sector prior during this stage? (storm surge, wind damage, population displacement, specific sector-level impacts)
- What is the role of DHS at this stage? FEMA? State and local officials with critical infrastructure protection and resilience responsibilities?
- What key nodes of the NRF Critical Infrastructure Support Annex are activated at this point, and how do they interact with one another?
- What government policies and public messaging processes come into effect during this stage that may impact critical infrastructure owner/operators? (Evacuation decisions, continuity of operations site activations, contra-flow transportation plans, MOUs with private sector entities, senior official public proclamations, etc.)
- What are the priorities of private sector entities within the projected path of the

hurricane at this stage?

## MODULE 3: LANDFALL (H-HOUR)

### 1. Scenario Build

- From September 9th through the 12th, Hurricane Heidi moved along a Northwest path in the Gulf of Mexico, threatening Southwest Louisiana and the Northern Texas Coast. There was much uncertainty as Heidi turned slowly north and then northeast over the next two days before finally making landfall in Southeastern Louisiana west of Grand Isle, LA, as a Category 4 storm during the early morning hours of September 14th.

- Widespread storm surge flooding occurred in Southeast Louisiana, with Federal protection levees overtopping in the metro New Orleans area, producing pockets of significant flooding in low lying areas along the Mississippi River. In addition, Heidi produced 8-10 inches of rainfall which aggravated the storm surge flooding and brought many of the major rivers north of Lake Pontchartrain into flood stage. Although Heidi weakened upon moving inland, strong winds and torrential rains make movement impossible even in areas that were not inundated by flood waters.

- Presidential disaster declarations are made for the impacted counties in TX and LA. Federal incident coordination structures and field offices are activated.

- Over 2.5 million people are displaced from the region running from Northeast Texas to New Orleans. Additionally, the following major infrastructure damages/disruptions are noted:

    - Over 4M customers are without power in the region, to include numerous major hospitals and special needs facilities
    - Numerous major transformer towers are down in SW Louisiana
    - Major rail and highway networks are shut down and/or damaged
    - The I-10 bridge across Lake Pontchartrain has been dismembered in several places; other secondary and tertiary bridges are down throughout the region
    - Two major nuclear power plants in the region have suffered minor damages, but have been placed in shut down mode
    - Over a dozen major oil and natural gas pipelines are inoperative, with extent of damages unknown
    - More than one hundred Gulf oil platforms have been evacuated; several are now “free-floating”
    - Six major oil refineries in the region have been extensively damaged and will require long repair times
    - Cellular communications have been significantly degraded throughout the region; cell towers are down across the area
    - Dozens of major chemical plants and hazmat facilities are under 4-8 feet of water; numerous chlorine rail tankers are overturned on site throughout the

area
    - The Mississippi River channel is blocked by floating debris and sunken vessels in numerous locations south of New Orleans and is temporarily closed to commercial traffic; major petroleum and agricultural import/export operations have been suspended
    - Gasoline is in short supply across the region; first responder operations have priority
    - Minor civil disorder and looting activities are reported in several cities and towns in the impacted area

**2. Discussion Questions**

- What are the principal concerns of the agency/organization that you represent at this stage? What are your information sharing requirements at this stage? How are you getting the information you need?
- How do the various critical infrastructure protection and resilience public and private sector partners coordinate with each other and maintain a common situational awareness following hurricane landfall? What form does this coordination take? How does the agency/organization that you represent fit into this scheme?
- What types of analytical products, imagery, damage assessment products/services are available to help guide critical infrastructure protection and resilience partner actions at this stage? How is this information communicated within the NIPP framework?
- What is the role of DHS at this stage? FEMA? State and local officials with critical infrastructure protection and resilience responsibilities? Other Federal agencies?
- What key nodes of the NRF Critical Infrastructure Support Annex are activated at this point, and how do they interact with one another?
- What government policies and public messaging processes come into effect during this stage that may impact critical infrastructure owner/operators? (Evacuation decisions, continuity of operations site activations, contra-flow transportation plans, MOUs with private sector entities, senior official public proclamations, etc.)
- What are the priorities of private sector entities within the damage footprint of the hurricane at this stage?
- How are private sector requests for assistance communicated to and considered for action by State and Federal governments post-landfall?
- How are private sector facility security concerns addressed post-landfall? Damage assessments? Civil disorder and looting?
- How are critical infrastructure restoration priorities determined by government and industry at this point?
- How do State and local officials deal with the issue of private sector restoration reentry and access? How does the Federal government weigh in on this issue?

## MODULE 4: POST-LANDFALL TO RECOVERY (2 DAYS TO 2 MONTHS FROM LANDFALL)

**1. Scenario Build**

- By September 15th, Heidi had weakened to a tropical storm and was located in eastern Mississippi, moving generally N-NE. Extensive rainfall and winds of 10-20 mph are noted along the path of the storm. By the 17th, Heidi has been downgraded to a tropical depression moving northward into the Ohio Valley and into Canada.

- Federal, State and local officials are dealing with more than a million shelter inhabitants and otherwise displaced individuals. Property damage to residences and businesses across the hurricane impact zone has been extensive.

- Dozens of important critical infrastructure facilities are under 4-8 feet of standing water. Suspected hazmat leaks are prevalent throughout the area.

- Long-term impacts to the regional transportation network and power grid are extensive. Over 2.5M customers remain without power for weeks into the event.

- Loss of pipeline capacity is causing major gas price hikes all along the Gulf Coast and Eastern Seaboard. Oil production in the Gulf area will take several months to be restored; regaining full production capacity remains doubtful.

- Most communications in the area have been restored within the first week of the event.

- Local water and waste water treatment facilities are inoperative across the region, exacerbating infrastructure restoration/recovery operations.

**2. Discussion Questions**

- What are the principal concerns of the agency/organization that you represent at this stage? What are your information sharing requirements at this stage? How are you getting the information you need?
- How do the government and private sector organize to support long term restoration and recovery operations? How do things "get turned back on" and in what sequence?
- What the major concerns at the sector level during this stage?
- How are key decisions made and priorities established between government and industry during this stage (i.e. to rebuild vice relocate, etc.)? How are these communicated?
- What is the role of DHS at this stage? FEMA? State and local officials with critical infrastructure protection and resilience responsibilities? Other Federal agencies?
- What government policies and public messaging processes come into effect during this stage that may impact critical infrastructure owner/operators?
- How are private sector requests for assistance communicated to and considered for action by State and Federal governments in this stage?
- How are major lessons from this event applied to the next cycle of preparedness?
- Does the NIPP framework adequately address long term recovery issues?
- What are the major takeaways that you have from this exercise?