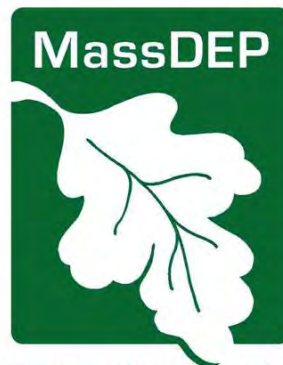


**Nantucket Harbor (CI-28) Geographic Response Plan
Deployment Exercise**

October 17, 2013

**AFTER ACTION
REPORT/IMPROVEMENT PLAN**

November 2013



Massachusetts Department of
Environmental Protection

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HANDLING INSTRUCTIONS

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2. The information gathered in this AAR/IP is unclassified.
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EXECUTIVE SUMMARY

The Massachusetts Department of Environmental Protection Nantucket Harbor (CI-28) Geographic Response Plan (GRP) Deployment Exercise occurred on October 17, 2013. The goal was to deploy multiple exclusion booming arrays, utilizing as many responders as possible from one town in the Cape and Islands Region (Nantucket) to exercise the existing Cape and Islands Geographic Response Plan CI-28 developed for Nantucket Harbor (Figure 1) and provide hands-on experience for oil spill first responders.

Figure 1. Nantucket Harbor (CI-28)



A total of 6 State Response Trailers are required to implement all of the tactics in this GRP. Responders should always consider on-scene conditions before deploying GRP tactics. Tactics may not be safe or effective under certain conditions. Responder safety should always be the first priority.

The Massachusetts Department of Environmental Protection (MassDEP) GRP Program exercise at Nantucket Harbor (CI-28) was developed to exercise local area first responder's Inter-Agency Planning and Resource Coordination, Communication, and Oil Spill Preparedness capabilities.

The Exercise Planning Team (EPT) was comprised of the Nantucket Emergency Management Coordinator, Nantucket Harbormaster, Nantucket Fire Department, Harbor Fuel Oil Corporation¹ (Harbor Fuel), the MassDEP, the United States Coast Guard Sector Southeastern New England, and Nuka Research and Planning Group, LLC (Nuka Research). Personnel from the Nantucket Boat Basin, a commercial marina, also participated in this exercise. Participation from commercial entities is not typical for this program, but they were included in this exercise because it is common practices for personnel from the town of Nantucket, Harbor Fuel, and Nantucket Boat Basin to work together in responding to oil spill incidents in Nantucket Harbor because of the remote and isolated nature of the island.

In preparation for this exercise, Initial, Mid-Term, and Final Planning Conferences were held.

The Initial Planning Conference (IPC) was held on May 15, 2013 at the Nantucket Police Station in Nantucket, MA. A Mid-Term Planning Conference (MPC) was held on September 11, 2013 at via teleconference and the Final Planning Conference (FPC) was held on October 8, 2013 via teleconference.

During the course of the IPC the EPT discussed and determined:

- Exercise scope
- Exercise objectives
- Design requirements and conditions including:
 - Timing of the exercise in relation to tidal schedule
 - Potential use of an oil surrogate to simulate spilled oil and determine efficacy of the booming strategy

During the MPC, the EPT further refined the exercise tasks and objectives and determined:

- Exercise scenario and schedule
- Manpower and vessel needs
- Logistical issues including identification of staging and field locations.
- Administrative and documentation requirements and assignments.

During the FPC, a comprehensive review of all exercise objectives was conducted as well as detailed, final discussions to review logistics and resolve all open issues.

Based on the EPT's deliberations, the following objectives were developed for the Nantucket Harbor (CI-28) site:

- Objective 1: Foster Inter-Agency Planning and Coordination by providing the opportunity for local responders to work with Federal (USCG) and State (MassDEP)

¹ MassDEP GRP Exercise program typically does not include commercial entities because the program focus is to provide hands-on experience for state and local first responders to use the oil spill equipment provided to them by MassDEP. This program is not intended to substitute for industry-led oil spill response exercises that are required under federal regulations.

departmental exercises and drills will be beneficial in strengthening local first responders' skill in deploying oil spill containment boom and will provide additional opportunities for inter-town and state coordination.

SECTION 1: EXERCISE OVERVIEW

Exercise Details

Exercise Name

Massachusetts Department of Environmental Protection Nantucket Harbor (CI-28) GRP Deployment Exercise

Type of Exercise

Full Scale Exercise

Exercise Start Date

October 17, 2013

Exercise End Date

October 17, 2013

Duration

5 hours

Location

The exercise briefing took place at the Nantucket Police Department (NPD) in the town of Nantucket, MA, with the field exercise following at Petrel's Landing and the Nantucket Boat Basin.

Sponsor

The MassDEP was the sponsor of the exercise, with input from the participating towns, the U.S. Coast Guard, the Southeast Regional Planning & Economic Development District (SRPEDD), and facilitation by Nuka Research.

Program

Massachusetts GRP Exercise Program

Mission

This exercise was designed to provide an opportunity for municipal first responders to practice protective booming of a sensitive area in response to a simulated oil spill.

Capabilities

Planning, Communications, On-Site Incident Management, and WMD and Hazardous Materials Response and Decontamination.

Scenario Type

Discharge of oil

Exercise Planning Team

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Participating Organizations

Participating organizations included:

- Nantucket Fire Department
- Nantucket Police Department
- Nantucket Harbormaster Department
- Harbor Fuel Oil Corporation
- Massachusetts Environmental Police
- Massachusetts Department of Environmental Protection
- Moran Environmental Recovery
- Nuka Research and Planning Group, LLC
- United States Coast Guard Sector Southeastern New England*
**Unable to participate due to federal government shutdown*

Number of Participants

- Players: 26
- Controllers: 1
- Facilitators: 3
- Observers: 2

SECTION 2: EXERCISE DESIGN SUMMARY

Exercise Purpose and Design

Geographic Response Plans (GRP) are tactical oil spill response plans tailored to protect a specific sensitive area from impacts following a spill. GRPs are developed by collaborative work groups that include local, state, and federal agencies, natural resource organizations, spill response organizations, and the oil industry. GRPs are incorporated into the state/federal Area Contingency Plans for oil spill and hazardous materials response. The Area Contingency Plan implements the National Contingency Plan and aligns with the National Response Framework. Once the GRPs have been published in the Area Plan, the next step in the planning and preparedness process involves exercising the GRPs to (1) field verify the resources and tactics identified in the GRP and (2) provide an opportunity for local responders to practice deploying spill response equipment utilizing an ICS framework.

The MassDEP GRP Exercise Program is currently in the fifth year of field exercises involving local fire, harbor, police, shellfish, and emergency management personnel along with state and federal agencies (Mass Division of Marine Fisheries, U.S. Coast Guard, Mass Environmental Police, National Oceanic and Atmospheric Administration). The exercise design, facilitation, planning, and reporting are funded by MassDEP. Participating towns may receive HSEEP grant funding to cover overtime and backfill costs.

The purpose of these exercises is twofold; 1) Test existing GRPs developed as part of the MassDEP GRP Program between 2009 and 2012 to determine their efficacy, and 2) Provide an opportunity for local first responders to improve skills utilizing the pre-positioned oil spill response equipment provided to them by MassDEP.

Exercise Objectives, Capabilities, and Activities

Capabilities-based planning allows EPTs to develop exercise objectives and observe exercise outcomes through a framework of specific action items that were derived from the Target Capabilities List (TCL). The capabilities listed below form the foundation for the organization of all objectives and observations in this exercise. Additionally, each capability is linked to several corresponding activities and tasks to provide additional detail.

Based upon the identified exercise objectives below, the EPT decided to demonstrate the following capabilities during this exercise:

- **Objective 1:** Foster Inter-Agency Planning and Coordination by providing the opportunity for local responders to work with Federal (USCG) and State (MassDEP) responders to plan for and deploy a GRP protective booming tactic during a simulated incident.
 - **Planning:**
 - Successfully demonstrate the ability to plan and coordinate a multi-

town/multi-jurisdictional exercise

- Initial, Mid-Term, and Final Planning Conferences as outlined above under Executive Summary.
- **Objective 2:** Promote Resource Coordination among local responders by coordinating use of assets from multiple towns.
 - **Communications:**
 - Assign common operating frequency (800 MHz) for Command and Operations;
 - Use WebEOC to communicate with MEMA and post incident updates;
 - Supply radios as needed to support interoperable communications; and
 - Communicate effectively during drill between shoreside/on-water responders, the Incident Commander (IC), and exercise controllers and facilitators.
 - **Objective 3:** Improve local Oil Spill Preparedness by deploying equipment from one or more MassDEP provided Oil Spill Response trailers, providing participants hands-on experience mobilizing and demobilizing boom in the field, and providing an opportunity to evaluate the effectiveness of the EX01c and EX01d booming strategies (as depicted on the CI-28 GRP) and identify any modifications necessary.
 - **On-Site Incident Management:**
 - Implement On-Site Incident Management;
 - Develop Incident Briefing (ICS 201);
 - **WMD and Hazardous Materials Response and Decontamination:**
 - Direct WMD and Hazardous Material Response and Decontamination Tactical Operations;
 - Demobilize WMD and Hazmat Response and Decontamination.

Scenario Summary

The scenario involved a catastrophic tank failure occurred at the Harbor Fuel tank farm at Salem and New Whale Street in Nantucket, resulting in the loss of 205,000 gallons of fuel oil. While the majority of the oil remains contained inside the tank farm's secondary containment, 2,000 gallons has entered Nantucket Boat Basin and threatens to enter Nantucket Harbor. Utilizing the Nantucket Harbor (CI-28) GRP and the prepositioned oil spill response trailers provided by the MassDEP and prepositioned equipment at the Nantucket Boat Basin, first responders from the town of Nantucket and personnel from Harbor Fuel Oil Corporation and Nantucket Boat Basin will deploy the EX01c and EX01d strategies (see Figure 1) to prevent oil from impacting other areas of Nantucket Harbor and The Creeks. The Exercise Planning Team developed an Incident Briefing (ICS 201), which was utilized and modified as necessary during the exercise. A safety officer from the Nantucket Fire Department was assigned, and after initial safety and operations briefings, the field responders transported, deployed, evaluated, demobilized, and stored the

boom and anchors used in the exercise (See Figures 2-13). Professional spill responders from Moran Environmental Recovery provided assistance and direction to the town responders. Personnel from Nuka Research and MassDEP acted as controllers and facilitators, providing direction, answering questions, and managing the exercise timetable.

Following the boom deployment exercise, a post-exercise Hot Wash was conducted during which participants were asked to share any insights learned during the exercise and/or any suggestions on modifications needed to successfully deploy the tactic. There was a group of observers who were present for all or part of the exercise including representatives from MassDEP and personnel from the Nantucket Boat Basin. Evaluation forms (Appendix C) were provided to and completed by all participants and observers who were present at the Hot Wash.

Figure 2. Exercise training and briefing site, Nantucket Police Department



Photo Courtesy of Nuka Research and Planning Group²

² All photos in document courtesy of Nuka Research and Planning Group, LLC

Figure 3. Trailerside equipment familiarization



Figure 4. Petrel's Landing deployment site



Figure 5. Nantucket Boat Basin deployment site



Figure 6. Exclusion boom deployed inside Nantucket Boat Basin



Figure 7. Harbormaster towing boom from Petrel's Landing



Figure 8. Exclusion boom deployed at Nantucket Boat Basin entrance



Figure 9. Anchoring a segment of Oil Spill Containment Boom



Figure 10. Town of Nantucket Tactical Operations Vehicle



Figure 11. Monitoring exercise activity inside the Tactical Operations Vehicle



Figure 12. Harbor Fuel deploys sorbent boom around nearby storm drains



Figure 13. Demobilizing boom at Petrel’s Landing



Nantucket Harbormaster	Nantucket FD	Nantucket PD	Harbor Fuel Oil Corporation	MassDEP
Spill Response Trailer	NFD Engine 1	NPD Tactical Operations Vehicle (Mobile Command Post)	Pre-Positioned Boom (Boat Basin Ice House)	Spill Response Trailers
23' Vessel			23' Vessel	Exercise facilitators
	Response Truck		Spill response contractor/trainer	

Table 1: Assets Supplied for Exercise by Town/Agency

Homeland Security Exercise and Evaluation Program (HSEEP)
After Action Report/Improvement Plan Massachusetts Department of Environmental Protection
(AAR/IP) Nantucket Harbor (CI-28) GRP Deployment Exercise

Figure 14. Nantucket EMA Communications Log (Page 1)

COMM Log ICS 309-SCCo ARES/RACES	1. Incident Name and Activation Number 2013 MassDEP Geographic Response Plan, C&I Exercise Nantucket	2. Operational Period (Date/Time) October 17, 2013 From: 0800 To: 1600	
3. Radio Net Name (for NCOs) or Position/Tactical Call Emergency Operation Center (EOC) Mobile Command Post		3. Radio Operator (Name, Call Sign) D. F. Fronzulo, EOC	
5. COMMUNICATIONS LOG			
Time (24:00)	FROM	TO	Message
	Call Sign/ID Msg #	Call Sign/ID Msg #	
1100	EOC	All Agencies	Conduct on site MassDEP Trailer equipment familiarization
1122	EOC	All Agencies	Catastrophic tank failure, Harbor Fuel Tank Farm, Salem and New Whale Street, 2000 gallons of fuel oil entered Nantucket Harbor in the Nantucket Boat Basin, adjacent to the tanker dock
1126	EOC	All Agencies	EOC manned and operational
1136	Harbor Fuel (HF)	EOC	HF beginning to deploy boom from the ice house in the Nantucket Boat Basin
	Nantucket Fire Department (NFD)	EOC	Investigation spill at the tank farm, requesting absorbent boom for containment at the valve and sand (DPW) for a berm on the roadway
1140	NFD	EOC	NFD, HF personnel making up boom for deployment at entrance to Boat Basin
1140	EOC		Attempted to contact webEOC to report activity to MEMA, unable to establish communication due to no conductivity at the EOC location
1145	NFD HF	EOC	Absorbent boom secured around leaking valve in tank farm Boom deployed from ice house to north face of dock entrance
1146	Harbormaster (HM) P-2	872 Central Dispatch	HM is participating in the oil spill drill, underway (P-2) from the Town Pier with 4POB
1146	HM	EOC	HM (P-2) Underway to deploy boom, 4POB
1153	HF	EOC	All notifications made to local, State and Federal agencies of the spill drill in progress (Copy of HF log attached)
1154	HM	EOC	HM (P-2) at staging area to begin towing boom to the entrance of the Boat Basin
1155	HF	EOC	Reports additional boom and absorbent, material available
1158	HM	EOC	First section of boom in tow to Boat Basin opening 150' section of 12" boom
1203	NFD	EOC	NFD reports 100' - 18" of additional boom ready for deployment
1210	HM	EOC	Boat Basin entrance secured with 150' boom
1212	EOC	DEP/NUKA	Request evaluation of boom configuration at ice house location
1214	HM	EOC	HM at staging area to begin towing second section 100' section of boom to Boat Basin fuel dock area
1218	DEP/NUKA	EOC	Evaluation complete at ice house location, installation is satisfactory
1223	HM	EOC	Second section 100'- 16" boom in place at fuel dock
1226	DEP/NUKA HF	EOC EOC	Evaluating additional boom configurations Removing boom, securing on top of the ice house
1230	DEP/NUKA HM	EOC	Evaluation complete, recommendations to be made at hot wash Begin recovery of boom sections to staging area
1244	HM	EOC	All boom sections at staging area, NFD washing boom with fresh water prior to storage
1246	EOC HM	NFD EOC	Sand for roadway sand berm delivered by DPW HM underway to Town Pier

ICS 309-SCCo ARES/RACES (rev. 2009-Sep-25)

Figure 15. Nantucket EMA Communications Log (Page 2)

1254	HM	EOC, 872 Central Dispatch	HM (P-2) moored Town Pier
1258	EOC	All Agencies	Secure for lunch at Staging Area (Petrel Landing)
1300			Secure EOC, Mobile Command Post
1340			Hot wash conducted by DEP/NUKA, EOC
1400			Hot wash complete, demobilize
1415-1600			Evaluate additional GRP for Nantucket Harbor/Creeks area Staging area Great Harbor Yacht Club Evaluate GRP's for Madaket Harbor, Hither Creek (3 locations Jackson's Point and Muskeget -Tuckernuck islands)
6. Prepared By (Name, Call Sign) D. F. Fronzuto, EOC		7. Date & Time Prepared October 17, 2013 (recorded) October 22, 2013 (prepared for submittal)	
			8. Page <u>2</u> of <u>2</u>

ICS 309-SCCo ARES/RACES (rev. 2009-Sep-25)

SECTION 3: ANALYSIS OF CAPABILITIES

This section of the report reviews the performance of the exercised capabilities, activities, and tasks. In this section, observations are organized by capability and associated activities. The capabilities linked to the exercise objectives of the Nantucket Harbor (CI-28) GRP Deployment Exercise are listed below, followed by corresponding activities. Each activity is followed by related observations, which include references, analysis, and recommendations.

Capability 1: Planning

Capability Summary: The Planning capability was implemented during pre-exercise planning conferences and during the full-scale exercise. The capability required multiple Town of Nantucket entities including the Emergency Management Coordinator, Harbormaster, Fire and Police Departments, and Harbor Fuel Corporation to identify objectives, select an exercise location, select a GRP tactic to be tested, and assign manpower, vessels, and other resources to support the exercise. Effective pre-planning led to a successful exercise.

Activity 1.1: Initial and Mid-Planning Conferences to discuss site selection, exercise objectives and other issues outlined above in the Executive Summary.

Observation 1.1: Strength: Representatives from multiple town entities and local industry (Harbor Fuel) worked well together, offering suggestions and weighing the merit of each before accepting or rejecting them and providing alternatives.

References: Homeland Security Exercise and Evaluation Program, Volume II, February 2007

Analysis: Town and industry (Harbor Fuel) objectives were well aligned and exercise design proceeded smoothly. All participating entities committed manpower and vessels to the exercise. There was agreement that the exercise should provide an opportunity for broad participation by as many local responders as possible.

Recommendations: Consider future multi-jurisdictional oil spill response operations-based exercises, including drills and functional exercises.

Activity 1.2: Mid-Term and Final Planning Conferences to assign manpower and equipment, work through exercise logistics, and additional activities outlined above in the Executive Summary.

Observation 1.2: Strength: All communities coordinated and integrated town equipment, vessels, and manpower. Multi-jurisdictional strike teams were assembled creating a training environment that fostered mentoring between responders with varying levels of experience.

References: Homeland Security Exercise and Evaluation Program, Volume II,

February 2007

Analysis: Logistical pre-planning led to a smooth exercise. Each community supplied vessels, equipment and responders, providing an opportunity to work together in a strike team setting with mixed crews from all towns.

Recommendations: Continue to periodically test GRPs and conduct exercises using spill response equipment and multi-jurisdictional approach.

Capability 2: Communications

Capability Summary: On-water spill response operations require a common tactical communications capability so that responders from multiple agencies can work together safely and effectively on the water and shoreline, and so that the Incident Command can maintain situational awareness of tactical operations.

Activity 2.1: Communicate Effectively During Drill Between On-Water/Shoreside Responders and IC.

Observation 2.1:

Strength: Radio communication was effective throughout the exercise.

References: Homeland Security Exercise and Evaluation Program, Volume II, February 2007, National Incident Management System

Analysis: In this exercise, participants communicated utilizing both VHF communications (Marine Channel 14) and hand-held UHF/800Mhz communications. The NPD provided their Tactical Operations Vehicle (Figures 10-11) which served as a Mobile Command Post (MCP) and has both UHF and VHF capability. The Town of Nantucket Emergency Management Coordinator, acting as the IC, communicated from the MCP with all participants and the Town of Nantucket Central Dispatch. All participants maintained good radio discipline minimizing radio “chatter” and confining radio communications to essential information. This practice was evident throughout the exercise, during which the Incident Command as well as exercise controllers and facilitators monitored radio communications and observed that while the responders communicated key information needed to deploy the boom, they did so quickly, succinctly, and without undue extraneous chatter.

Recommendations: None

Activity 2.2: Use WebEOC during exercise.

Observation 2.2:

Area for Improvement: The MCP was unable to establish connectivity to communicate with MEMA via WebEOC during the exercise.

References: Homeland Security Exercise and Evaluation Program, Volume II, February 2007, National Incident Management System

Analysis: The simulated oil spill provided an opportunity to use WebEOC as a source of information and to post exercise updates. Utilizing the communications and computer equipment contained within the MC, the IC and NPD personnel attempted to utilize WebEOC to communicate exercise information to MEMA and were unsuccessful in establishing a connection.

Recommendations: Investigate causes of communication issues to determine if there are hardware or software issues or if problem was due to MCP's geographic location.

Capability 3: On-Site Incident Management

Capability Summary: This full-scale exercise provided a key link by allowing first responders from the community of Nantucket to work together in an ICS-based scenario to exercise their ability to deploy boom from a state spill response trailer during a mock oil spill. While individual agencies often conduct intra-departmental training and exercises that strengthen their ICS capabilities, these GRP exercises provide an opportunity for first responders and town agencies to exercise their incident management capabilities in an exercise scenario that includes multiple local state and federal entities. An added element in this exercise was the inclusion of Harbor Fuel Oil Corporation and Nantucket Boat Basin, both commercial entities.

Activity 3.1: Implement On-Site Incident Management/Develop Incident Briefing (ICS 201)

Observation 3.1:

Strength: Based on the ICS-201 developed prior to the exercise, the IC assigned, coordinated and directed all personnel and resources in carrying out the identified protective booming strategies in accordance with GRP CI-28.

References: Homeland Security Exercise and Evaluation Program, Volume II, February 2007, National Incident Management System, GRP CI- 28

Analysis: The process of assigning responders to various strike teams provided an opportunity for the departmental leadership to consider the strengths and abilities of their responders for various spill response functions. Strike teams were comprised of responders from each participating agency to promote interagency coordination. The Nantucket Emergency Management Coordinator acted as IC and a Nantucket Firefighter acted as Safety Officer. During the exercise design phase an ICS 201 was completed by the EPT. On the day of the exercise, controllers and facilitators along with the Emergency Management Coordinator from Nantucket finalized field assignments by completing the ICS-201 based on personnel and resources on-scene. Assignments included an IC, Safety Officer, and vessel and shoreside strike teams. This group of first responders work together on a regular basis and have deployed this equipment before and this close working relationship and equipment

familiarity was obvious to exercise controller and facilitators even before the exercise started. Using the ICS-201 the IC briefed all participants prior to commencement of the exercise, established radio communications, and directed all exercise activity from the MCP, and logged all exercise activity utilizing an ICS-309 Comm Log (Figures 14 and 15).

Recommendations: None.

Capability 4: WMD and Hazardous Materials Response and Decontamination

Capability Summary: MassDEP has developed an oil spill response capacity throughout coastal regions of the state by providing oil spill response equipment trailers to local fire departments, developing GRPs (tactical plans to protect sensitive areas from oil spill impacts), and providing initial training to local first responders. This functional exercise provided a key link by allowing first responders from different agencies and entities within the Town of Nantucket to work together to exercise their ability to deploy boom from an oil spill response trailer during a mock oil spill. This community-based spill response program requires that towns and agencies be able to work together, since a major oil spill may require significant mutual aid and assistance. This field exercise provided a realistic scenario for the agencies to work together to improve their spill response capacity.

Activity 4.1: Direct/Activate WMD and Hazardous material Response and Decontamination Tactical Operations; Deploy Geographic Response Plan

Observation 4.1:

Strength: The GRP provided a tactical plan that was ready for field implementation. Participants were assigned by the IC, Harbormaster, Harbor Fuel Qualified Individual, and the exercise controller to on-water and shoreside strike teams. The two on-water strike teams who were assigned to boom deployment were comprised of one Nantucket Harbormaster vessel and one Harbor Fuel vessel. The shoreside strike teams were also comprised of participants from the Nantucket Harbormaster, Nantucket Fire and Police Departments, Massachusetts Environmental Police, Harbor Fuel, and Nantucket Boat Basin who all worked well together throughout the exercise.

References: Homeland Security Exercise and Evaluation Program, Volume II, February 2007, National Incident Management System, GRP CI-28

Analysis: The primary objective of GRPs is to deploy boom ahead of an oil spill to prevent or reduce negative impacts to environmentally sensitive areas. Successful deployment of GRP booming tactics requires that the boom be effectively anchored and positioned so that it will divert, deflect, or exclude oil from the identified sensitive area (s). This exercise provided the chance to test several existing strategies and evaluate the effectiveness of each in this area and in these weather conditions. Two vessels (Nantucket Harbormaster and Harbor Fuel) and two shoreside teams (multi-

jurisdictional) deployed the exclusion boom configurations in Nantucket Harbor (CI-28). On-water strike team elements coordinated their activities towing, positioning, and anchoring (all shoreside) boom and worked extremely well together throughout the deployment and retrieval phases of the exercise.

Harbor Fuel deployed 260 ft. of 18-inch boom at the EX01d location inside the Nantucket Boat Basin (Figures 5-6). Harbor Fuel maintains 300 ft. of boom for immediate deployment at the icehouse located at the Nantucket Boat Basin at the exact site of the EX01d GRP strategy. This allows for rapid deployment in the event of an actual or potential discharge of oil such as that depicted in this exercise scenario.

Following deployment of the EX01d strategy, the Nantucket Harbormaster vessel deployed 150 ft. of 12-inch boom from their MassDEP trailer that was staged (for the exercise) at Petrel's Landing across the entrance to the Nantucket Boat Basin (Figures 4, 7-8). The Harbormaster vessel deployed this strategy easily with assistance from Nantucket Boat Basin personnel on the shoreside strike team.

Following deployment of EX01c and EX01d, the Nantucket Harbormaster deployed an additional 100 ft. of 18-inch boom from the MassDEP trailer at a new location outside the boat basin on the southeast end adjacent to the icehouse. During the operational briefing, participants identified this area as one where boom would be required because openings in the pier/bulkhead exist here and allow free transport of water to and from the inner boat basin. With the exception of the boat basin entrance, the rest of the boat basin pier system is completely enclosed by wood or steel bulkheads that extend from each pier down to the harbor bottom. The Nantucket Harbormaster deployed this boom easily with assistance from Nantucket Boat Basin personnel on the shoreside strike team.

Recommendations: Conduct future GRP deployment exercises to keep boom deployment skills current and to test GRP strategies at other locations. Improve boom deployment and tending skills by deploying existing GRPs that call for and incorporate boom arrays in different configurations and tending throughout the tide.

MassDEP will update the booming strategy for the Nantucket Harbor (CI-28) GRP at EX01d to indicate the need for 300 ft. of boom, and add a new 100 ft. exclusion strategy on the southeast side of the Nantucket Boat Basin. Based on subsequent discussions with the Nantucket Emergency Management Coordinator and a post-exercise site visit to the area known as The Creeks, MassDEP will also look at revising the EX01b strategy as well as the EX01a to the east of greater Nantucket Harbor.

Activity 4.2: Demobilize WMD and Hazmat Response and Decontamination

Observation 4.2:

Strength: The boom was offloaded, staged, deployed, retrieved, rinsed and restowed without incident.

References: GRP CI-28

Analysis: Demobilization of boom can be time-consuming and tedious. In this exercise, demobilization and transport was done primarily by hand as the boom itself was deployed directly off the shoreline at Petrel's Landing with the oil spill equipment trailer immediately adjacent to the shoreline. There was also boom deployed from the top of the icehouse in the Nantucket Boat Basin using pre-staged boom belonging to Harbor Fuels. Long distance towing was not required either as the deployment location was immediately adjacent to the boat ramp. Responders worked well throughout this process, showing strong teamwork. Nantucket Fire provided an engine to support boom rinsing.

Recommendations: None

SECTION 4: CONCLUSION

This was a useful and successful exercise. The existence of a well-established partnership and working relationship between all participants was evident early on in the planning process and this exercise provided an opportunity for this group to further strengthen an already robust emergency response partnership. All participants worked together seamlessly. The boom deployment was accomplished relatively quickly and safely under ideal weather conditions. The current speed was negligible and there was very little wind, which made deployment and demobilization relatively easy. The group demonstrated the capability to assign participants to various roles, including IC, Safety Officer, vessel-based and shore responders, strike teams, and observers. Equipment from the Nantucket Oil Spill Response trailer was deployed from vessels provided by multiple local agencies, and participants became more familiar with deploying, setting, and demobilizing boom. The Incident Command communicated effectively and clearly with both vessel-based and shore-based responders using the NPD MCP as a central communications relay.

Lessons learned from this exercise included but were not limited to:

- Responders worked well together in a strike team setting that mixed personnel from different agencies and entities.
- While 12-inch boom was used at the boat basin entrance during this exercise, first responders should consider using 18-inch boom instead as the 12-inch boom appeared to be planing slightly despite the fact that there was no significant current or wind. 18-inch boom will provide a slightly higher sail area and reduce the risk of oil loss due to splashover.
- Petrel's Landing and the Nantucket Boast Basin proved to be an ideal staging area although there were some connectivity issues with the MCP as outlined above under the Communications capability. This issue will be investigated to determine if it was due to where the MCP was located during the exercise. At EX01d, more than 200 ft. of boom was required in this location. 260 ft. was used and the GRP will be modified to indicate the need for 300 ft. of boom at this location.
- The pre-staged boom at the Nantucket Boat Basin icehouse should be covered to protect it from the elements, reduce UV exposure, and generally reduce degradation.

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the Town of Nantucket, as a result of the Massachusetts Department of Environmental Protection Nantucket Harbor (CI-28) Geographic Response Plan Exercise conducted on October 17, 2013. These recommendations draw on both the After Action Report and the After Action Conference.

Improvement Plan Matrix

Capability	Observation Title	Recommendation	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Complete Date
Capability 2: Communications	2. The MCP was unable to establish connectivity to communicate with MEMA via WebEOC during the exercise.	2.1 Investigate causes of communication issues to determine if there are hardware or software issues or if problem was due to MCP's geographic location.	2.1.1 Verify Internet connectivity prior to locating the Mobile Command Post for any future exercises or events.	Communications	Town of Nantucket	Dave Fronzuto	October 2013	October 2014
Capability 4: WMD and Hazardous Materials Response and Decontamination	4. Direct/Activate WMD and Hazardous material Response and Decontamination Tactical Operations	4.1 Deploy Geographic Response Plan	4.1.1 MassDEP will revise GRP CI-28 based on exercise findings/observations.	WMD and Hazardous Materials Response and Decontamination	MassDEP	DEP representative	October 2013	October 2014

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APPENDIX B: LESSONS LEARNED

While the After Action Report/Improvement Plan includes recommendations which support development of specific post-exercise corrective actions, exercises may also reveal lessons learned which can be shared with the broader homeland security audience. The Department of Homeland Security (DHS) maintains the *Lessons Learned Information Sharing* (LLIS.gov) system as a means of sharing post-exercise lessons learned with the emergency response community. This appendix provides jurisdictions and organizations with an opportunity to nominate lessons learned from exercises for sharing on *LLIS.gov*.

For reference, the following are the categories and definitions used in LLIS.gov:

- **Lesson Learned:** Knowledge and experience, positive or negative, derived from actual incidents, such as the 9/11 attacks and Hurricane Katrina, as well as those derived from observations and historical study of operations, training, and exercises.
- **Best Practices:** Exemplary, peer-validated techniques, procedures, good ideas, or solutions that work and are solidly grounded in actual operations, training, and exercise experience.
- **Good Stories:** Exemplary, but non-peer-validated, initiatives (implemented by various jurisdictions) that have shown success in their specific environments and that may provide useful information to other communities and organizations.
- **Practice Note:** A brief description of innovative practices, procedures, methods, programs, or tactics that an organization uses to adapt to changing conditions or to overcome an obstacle or challenge.

Exercise Lessons Learned

The entire MassDEP GRP development and testing program should be considered a best practice as it provides a model for other states to follow. This program is unlike any other in the country in that it provides a comprehensive method to:

- Develop and test Geographic Response Plans for oil spills
- Train first responders on boom deployment basics as well as specific GRP tactics

Additionally, MADEP:

- Provides equipment in the form of pre-positioned and fully stocked pollution response trailers that are assigned to select Massachusetts coastal communities
- Provides long-term maintenance and support of the equipment via a maintenance and equipment replacement program

This program has proven highly successful and garnered praise from the international community. In 2011, MADEP and Nuka Research and Planning Group, (the contractor

overseeing the project) submitted a white paper (later approved and entered as a poster) at the International Oil Spill Conference in Portland, OR in 2011. The poster was entitled “Approaches to Development and Testing of Geographic Response Plans in Massachusetts and Rhode Island” and won first place in the Preparedness category.

In 2013, this GRP testing and exercise program was featured at the British Columbia Land Based Spill Preparedness and Response Symposium held in Vancouver, BC.

In 2014, this program will again be highlighted at the International Oil Spill Conference which will be held in Savannah, GA with a poster entitled, “Massachusetts First Responder Exercises: Preparing Local Communities for Oil Spill Response.

APPENDIX C: EXERCISE EVALUATION FORM

Massachusetts GRP Deployment Exercise - EVALUATION

Cape & Islands Region GRP: Nantucket Harbor (CI-28)		
Town: Nantucket and Harbor Fuel Oil Corp.	Test date: October 17, 2013	
Instructions to Evaluators: Complete this form based on your observations of the GRP exercise.		
Evaluator Name:	Evaluator Organization:	
What was your role in exercise? (responder, observer, facilitator, etc.)		
What was your level of spill response experience prior to this exercise? NONE TRAINING ONLY SOME SPILL RESPONSE A LOT		
Please check a box to respond to the following.	YES	NO
1. I feel more prepared to deploy oil spill response equipment now than I did prior to this exercise.	<input type="checkbox"/>	<input type="checkbox"/>
2. I have a better understanding of spill response tactics than I did prior to this exercise.	<input type="checkbox"/>	<input type="checkbox"/>
3. I would participate in future oil spill response equipment or Geographic Response Plan deployments at other sites.	<input type="checkbox"/>	<input type="checkbox"/>
4. The objectives were clearly explained and the deployment exercise met the objectives.	<input type="checkbox"/>	<input type="checkbox"/>
5. The exercise was conducted safely.	<input type="checkbox"/>	<input type="checkbox"/>
Based on your experience today, would you feel comfortable setting a similar boom array during an actual incident? NOT AT ALL A LITTLE MODERATELY VERY		
Please evaluate how well Nantucket Boat Basin/Petrel's Landing worked for deploying and demobilizing boom from the trailer for this deployment: ___ <u>Ideal</u> staging area for boom for this tactic. ___ <u>Sufficient</u> as a staging area for boom for this tactic. ___ <u>Not sufficient</u> as a staging area for boom for this tactic.		
Did the Exercise Plan (map diagram) provide clear direction as to how and where to deploy the boom? If not, please identify problems & suggest improvements.		

**PLEASE USE THE BACK OF THIS PAGE
FOR ANY ADDITIONAL COMMENTS**

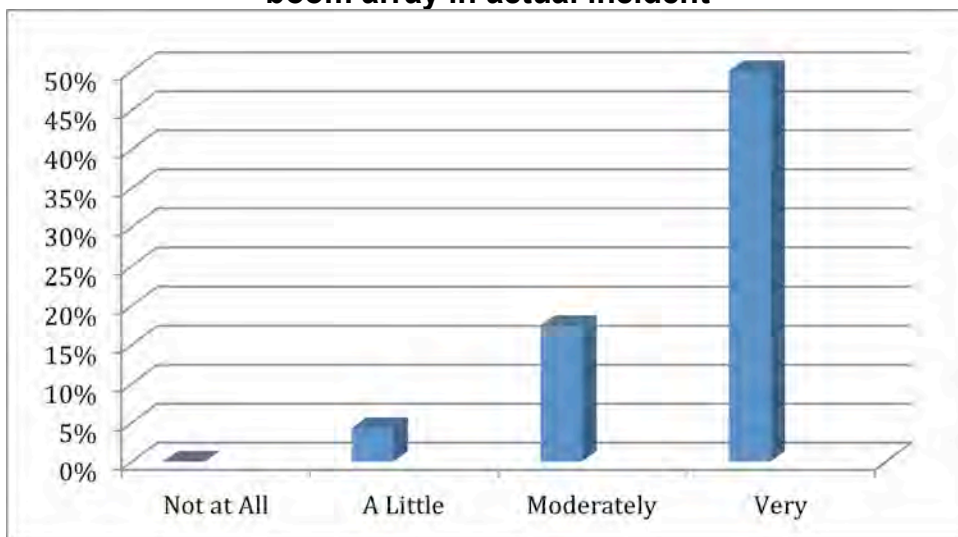
	Yes	No
Prior Oil Spill Experience	96%	4%
More Prepared after Exercise	100%	0%
Better Understanding of Deploying Spill Response Tactics	100%	0%
Participate in Future GRP Deployments	100%	0%
Field Objectives Clearly Explained and/or Met	100%	0%

Prior Spill Experience



23 Respondents

Based on experience today, comfort level with setting a similar boom array in actual incident



Petrel's Landing/Nantucket Boat Basin as Staging Area



APPENDIX D: EXERCISE EVENTS SUMMARY TABLE

Schedule of Events

Time	Personnel	Activity	Location
October 17, 2013			
0800	All	Mobilize and Stage Equipment	Petrel's Landing/Nantucket Boat Basin
0900	All	Conduct First Responder Training	Nantucket PD Training Room
1030	All	Nantucket Equipment Overview	NPD/NFD Storage Facility (adjacent to NPD)
1045	All	Transit to Petrel's Landing for Field Exercise	
1100	All	Conduct MassDEP trailer equipment familiarization and Harbor Fuel response equipment demo	Petrel's Landing/Nantucket Boat Basin
1130	All	Safety, Operational, and Communications Briefing (including WebEOC brief)	Petrel's Landing/Nantucket Boat Basin
1145	All	Deploy Exclusion (EX) tactic at EX01c and EX01d. Evaluate configuration.	Nantucket Boat Basin boat ramp/docks
1230	All	LUNCH	Petrel's Landing
1300	All	Demobilize EX01c and EX01d, rinse and repack equipment	Petrel's Landing/Nantucket Boat Basin
1330	All	Hot Wash/Complete and turn in all Participant Feedback Forms	Petrel's Landing/Nantucket Boat Basin
1345	All	Demobilize/Adjourn	Petrel's Landing/Nantucket Boat Basin
1400	Nantucket EM Coordinator, MassDEP, Nuka Research	Evaluate area between Boat Basin and EX01b at The Creeks for alternative booming strategy	Nantucket Harbor/The Creeks

Tides (Nantucket, MA-17OCT13)

HIGH				LOW			
AM	Ft.	PM	Ft.	AM	Ft.	PM	Ft.
11:31	3.7			4:47	0.1	5:22	-0.1

APPENDIX E: ACRONYMS

Acronym Table

Acronym	Meaning
CI	Cape & Islands
DV	Diversion booming
EPT	Exercise Planning Team
EMA	Emergency Management Agency
FPC	Final Planning Conference
GRP	Geographic Response Plan
IPC	Initial Planning Conference
IC	Incident Command(er)
LL	Lessons Learned
MassDEP	Massachusetts Department of Environmental Protection
MCP	Mobile Command Post
MPC	Mid-Planning Conference
SRPEDD	Southeast Regional Planning & Economic Development District
TCL	Target Capabilities List
UHF	Ultra High Frequency
USCG	United States Coast Guard
VHF	Very High Frequency