Handout 4-1: Katrina Area Command Scenario

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Unified Command and Control: Keeping "pollution catastrophe" off Katrina's resume' of tragic consequences.

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In the aftermath of the devastating winds and flooding from Hurricane Katrina, more than 8.1 million gallons of oil escaped from numerous damaged oil infrastructure sources.[1] The amount of oil released was second, in the U.S., only to the tragic grounding of the Exxon Valdez, which resulted in the largest oil spill in U.S. history (11 million gallons).[2]

This was a different situation entirely, as this was not the result of human error, but rather resulted from the most powerful natural forces experienced by our nation in the modern era. The logistical challenges from this hurricane were something never envisioned by contingency planners, nor encountered before by oil spill responders. The only way to overcome these immense challenges was for governments and industry organizations to mount an effective and efficient response with absolute unified command and control. Fortunately, they employed a process tried and true: the Incident Command System.

The Challenges

Hurricane Katrina ravaged the robust oil and gas infrastructure system in Southeastern Louisiana, causing oil to be discharged from more than 140 sources, 10 of which were high-volume oil pipelines, refineries, and storage facilities.[3] The marine facilities stretched more than 130 miles along the Mississippi River. Many were inland and around the sensitive Mississippi delta region. But the industry was as ready as it could be.

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[1] "NOAA's Office of Response and Restoration Responds to Hurricane Katrina," available at http://response.restoration.noaa.gov/index.php.
[2] "Prince William's Oily Mess: A Tale of Recovery," available at http://response.restoration.noaa.gov/index.php.
[3] "NOAA's Office of Response and Restoration Responds to Hurricane Katrina," available at http://response.restoration.noaa.gov/index.php.

Figure 1: Oil leaks from hurricane-damaged oil tanks. USCG photo

For example, Chevron Pipe Line (CPL), two days prior to Hurricane Katrina's landfall, activated its emergency response team and set up an incident command post in Houston, Texas. CPL has two major facilities in the region that were damaged, one near Empire, La. and a second at Fourchon, La. These terminals are where oil pipelines from the Gulf of Mexico come onshore and oil is stored and redirected to refineries and other petrochemical facilities along the gulf coast. All CPL's Southern Louisiana facilities were shut down, in anticipation of the storm. Other oil companies also took similar actions.

High winds and massive flooding caused damage to the oil infrastructure. Fortunately, these same forces helped to disperse and evaporate a large portion of the oil. The remaining oil settled into depressions—natural culverts and canals—or into dikes and containments already in place in the event of a catastrophic infrastructure release. However, the devastating Katrina moved a large volume of oil onto private property and into sensitive environments adjoining the oil facilities. In one neighborhood, oil contamination could be measured in square miles (Figure 1). This oil contaminated the exterior and interior areas and contents of private property, as it flowed through broken windows on vehicles, boats, sheds, and garages. Flood waters moved far inland and contaminated streets, play- grounds, businesses, and public service buildings.

On the environmental side, oil pollution removal was complicated by inaccessibility caused by massive quantities of obstructive debris. In one site, oil was pushed into highly sensitive forested wetlands and deposited into natural depressions. These forested wetlands were teeming with wildlife, including alligators and poisonous snakes. The vegetation in these wetlands was so dense, that vehicle access was not possible (Figure 2). Additionally, oil settled into miles of canals, culverts, and "cuts" on the backside of the Mississippi River levee that were only accessible by shallow water boats. At another location, oil migrated into a swamp grass region that was loaded with shellfish and shellfish spawning sites. Manual recovery was not an option here, due to

the likely intrusive damage from the use of mechanical equipment and tools.

Figure 2: Oil from damaged tanks was moved by hurricane forces into impassable forested wetlands. USCG photo.

The normal infrastructure that would support a major oil spill operation was destroyed or damaged beyond immediate repair. More than 85 percent of the navigational aids along the Mississippi and its tributaries were destroyed.[4] Sunken vessels and floating debris made water operations highly risky. Communications beyond line of sight for handheld radios was non-existent. Lodging, food, medical care, fuel, and transportation resources were not available.

Local oil spill responders and support workers were scattered by the storm, many having lost their homes and livelihood. The magnitude of impact is best summed up by oil company representatives who were there on the ground trying to assemble forces to combat the spill. For Chevron Pipe Line, for instance, many of their employees who lived in southern Louisiana returned to lost or damaged homes. This was CPL's and the other oil company's first priority: Locate and ensure the safety of employees and their families. Chevron Pipe Line designated an incident management team (IMT) whose sole function was to address this priority, in addition to having an IMT that dealt with the oil spill. A third IMT was used to conduct a complete operational and safety site assessment for all their facilities in the region. As Chevron Pipe Line moved to respond on all these fronts, it experienced massive difficulty in even contacting emergency response contractors. Marine traffic was at a standstill, due to hidden dangers, and roads were closed and impassable.

Emergency resources brought in for the disaster response were rightfully focused on the harrowing search and rescue effort throughout the southeast Louisiana region. It was clear that these resources could not be counted on by the oil spill responders. They

[4] "NOAA's Office of Response and Restoration Responds to Hurricane Katrina," available at http://response.restoration.noaa.gov/index.php.

were forced to scrounge what little resources that survived the storm and obtain resources from outside the region, hundreds of miles away.

The Coast Guard federal on-scene coordinator, CAPT Frank Paskewich, required a quick plan to attack the oil spills. He approved a plan proposed by his Coast Guard incident management team to implement an area command construct for the spill.

Area Command Construct

Historically, oil spill responses involved the formation of a unified command (UC) composed of the federal on-scene coordinator, state responders, and vessel/facility owners. During Katrina, most of the oil released was from six major oil spill companies.[5] Using a single unified command with six industry representatives as unified commanders was problematic for several reasons. First, the geography of the impacted area was vast and would remove many of the industry unified commanders far from their incidents. Second, each company had its own incident management teams and incident command posts, some established prior to the hurricane. Third, it would have been a challenge, to absorb all these teams and resources into a single efficient and effective UC. Finally, each senior spill response manager from each company was rightfully concerned for its individual oil response, and therefore would have competing priorities with other industry counterparts.

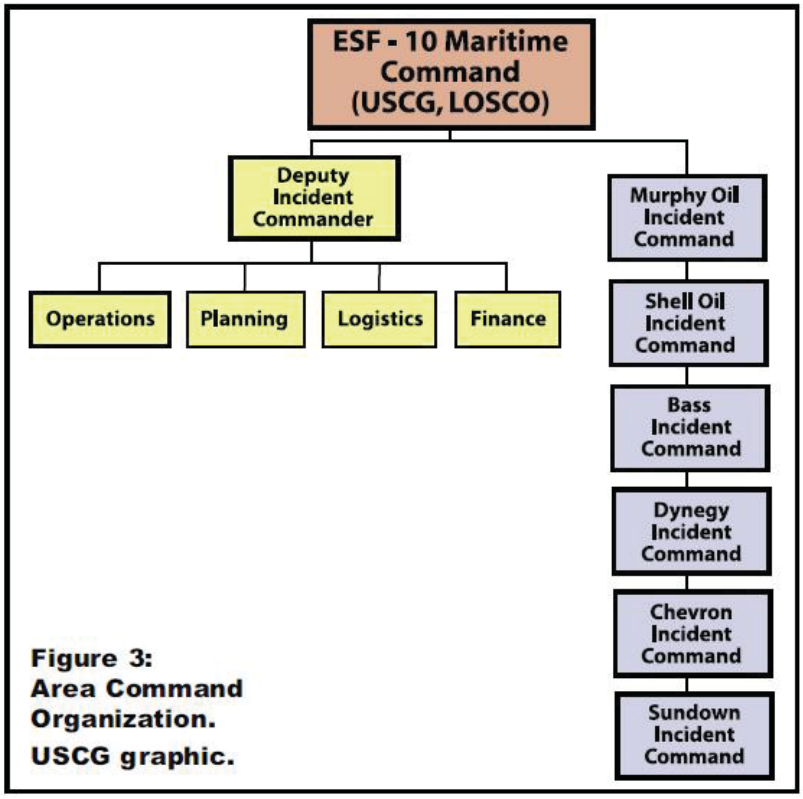

Figure 3: Area Command Organization. USCG graphic.

[5] "NOAA's Office of Response and Restoration Responds to Hurricane Katrina," available at http://response.restoration.noaa.gov/index.php.

Whenever there are multiple incidents having competing priorities, such as the Katrina oil spills, an Incident Command System area command is the model of choice. An area command is an organization above incident commanders that sets the priorities for all incidents and ensures that competing demands are resolved for the benefit of the entire response effort.

A quick meeting was held by government and industry oil spill responders to discuss CAPT Paskewich's proposed option. The collective industry, federal, and state representatives settled on the formation of a unified area command, staffed by U.S. Coast Guard and Louisiana Oil Spill Coordinator's Office (LOSCO) spill response managers. This unified area command would oversee the six major oil companies who would act as incident commanders for each of their own spills. The organization chart for the response is illustrated in figure 3.

The unified area command was called the "Emergency Support Function-10 Maritime Command" initially. ESF-10 is a term used in the National Response Plan for designating a response to an oil or hazardous materials incident. The word "area" was omitted from the title purposefully, to avoid confusion with other National Response Plan entities already in place. The word "maritime" was necessary to distinguish the operation from the Environmental Protection Agency's ESF-10 inland command. Since there was one Coast Guard incident command post in Alexandria, La. already, the ESF-10 maritime command's command post was termed forward operating base Baton Rouge.

The organization chart in figure 3 is consistent with the ICS area command concept, with one notable difference: There is an operations section and a deputy incident commander to lead operations, planning, logistics, and finance sections. This was to ensure that an organization existed among the regulators to verify that industry activities were monitored for compliance with state and federal environmental regulations. Additionally, the maritime command's operation section was tasked with managing the investigation and response to hundreds of smaller spills.

Incident Action Planning

It was important to develop a process for ensuring good communications and coordinated operations between the unified maritime command (MC) and the industry incident commanders (ICs). The MC used the operational planning cycle (Figure 4) for developing its own incident action plans and to communicate incident priorities and objectives to the industry ICs. These were shared with the industry ICs, who developed their own incident action plans for their specific incidents. These were forwarded to the maritime command for review and approval. The maritime command employed a second-shift incident management team, responsible for reviewing the industry incident action plans for consistency with maritime command priorities and objectives.

The timing in coordinating this process was critical. Figure 5 provides an illustration of the processes. It is very similar to figure 4, however a line is drawn in some of the blocks to show the segregated, but nearly parallel activities undertaken by the maritime

command and incident commanders. One caveat for figure 5: The industry planning cycle and MC planning cycle may not have matched up as perfectly as the figure suggests. The diagram has been simplified to pro- vide the reader with a user-friendly illustration to explain the process.

Starting at the left corner of figure 5, at the “Maritime Command Objectives Meeting” block, the maritime command would develop priorities and objectives for the entire operation and for their own unique activities. At the MC/incident commander brief, the priorities and objectives for the entire operation were discussed via teleconference. Any additional issues or concerns involving the entire group were also dis- cussed. After the briefing, the planning process splits, as the maritime command and industry incident commanders start developing their own incident action plans to execute the identified priorities and objectives. If necessary, the industry incident commanders could expand or supplement the priorities and objectives developed by the maritime command to address concerns unique to their operation.

As required by the Incident Command System, the ICS command and general staff members are briefed on priorities and objectives at the tactics meeting, and then develop strategies and tactics for the operation. The maritime command and IC entities do not all con- verge until after conferences between the MC and individual ICs. The one-on-one conversations enabled the industry incident commanders to address their unique concerns privately with the MC, without tying up the other industry incident commanders.

The planning meeting is where the IC or unified commanders all hear and approve/reject the proposed plan for the next operational period. Following the planning meeting, incident action plans were developed and forwarded on to the maritime command for review and approval. This was the responsibility of second shift in the maritime command forward operating base. Once all plans were approved, they were sent back to the respective ICs and MC operations sections for briefing and execution. The cycle begins again at the start of a new operational planning period.

To ensure close coordination between MC and IC planning efforts, the maritime command provided assistant liaison officers in the industry incident command posts. These assistants all worked for the maritime command main liaison officer. Their job was to ensure consistent planning efforts between the MC and ICs and to assist the incident commanders with other liaison officer duties as necessary. Later in the response, these assistant liaison officers were removed, due to lack of resources, and routine calls between the maritime command and incident commanders were reduced. A later, informal lessons-learned discussion between the MC and ICs revealed it was more prefer- able to maintain the daily MC/IC calls and keep the assistant liaison officers located within the industry incident command posts for a longer period.

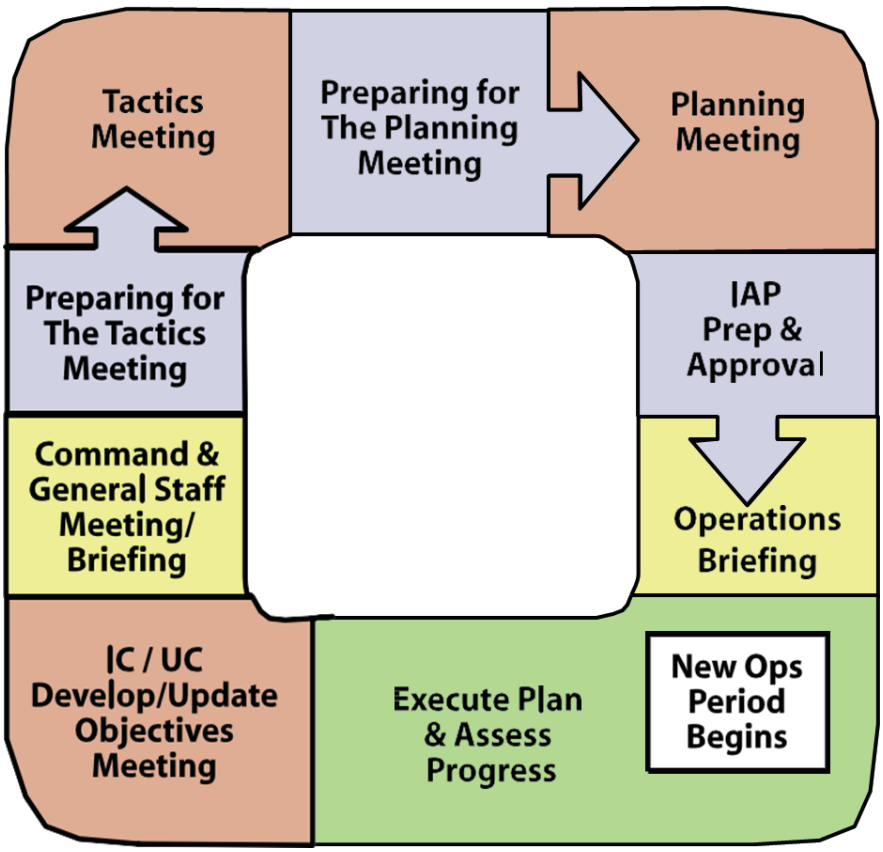

Figure 4: ICS operational planning cycle.

Chevron Pipe Line Facilities' Perspective

As Chevron Pipe Line Facilities began its response, CPL command staff implemented the Incident Command System (planning cycle), using the incident action plan software supported by the Response Group Inc. This helped frame the response objectives and primary/alternate strategies and tactics to be implemented in the field to accomplish objectives

Utilization of the Incident Command System, by industry and agencies, allowed seamless integration and information flow between the CPL command post and the maritime command. Clear expectations were identified early in the response by the incident specific federal on-scene coordinator regarding U.S. Coast Guard MC objectives (i.e. safe and aggressive removal of all loose gross oil)..

Meeting schedules were set in place to allow industry and maritime command to share information utilizing three key ICS forms—ICS 202 general response objectives, ICS 204 field assignment and ICS 209 incident status summary. To further assist CPL during the response, USCG placed a Coast Guard liaison in the Chevron Pipe Line facilities incident command post. This ensured open communication between federal and state agencies within the unified command, transferred key information for media releases, and worked through access issues involving restricted areas.

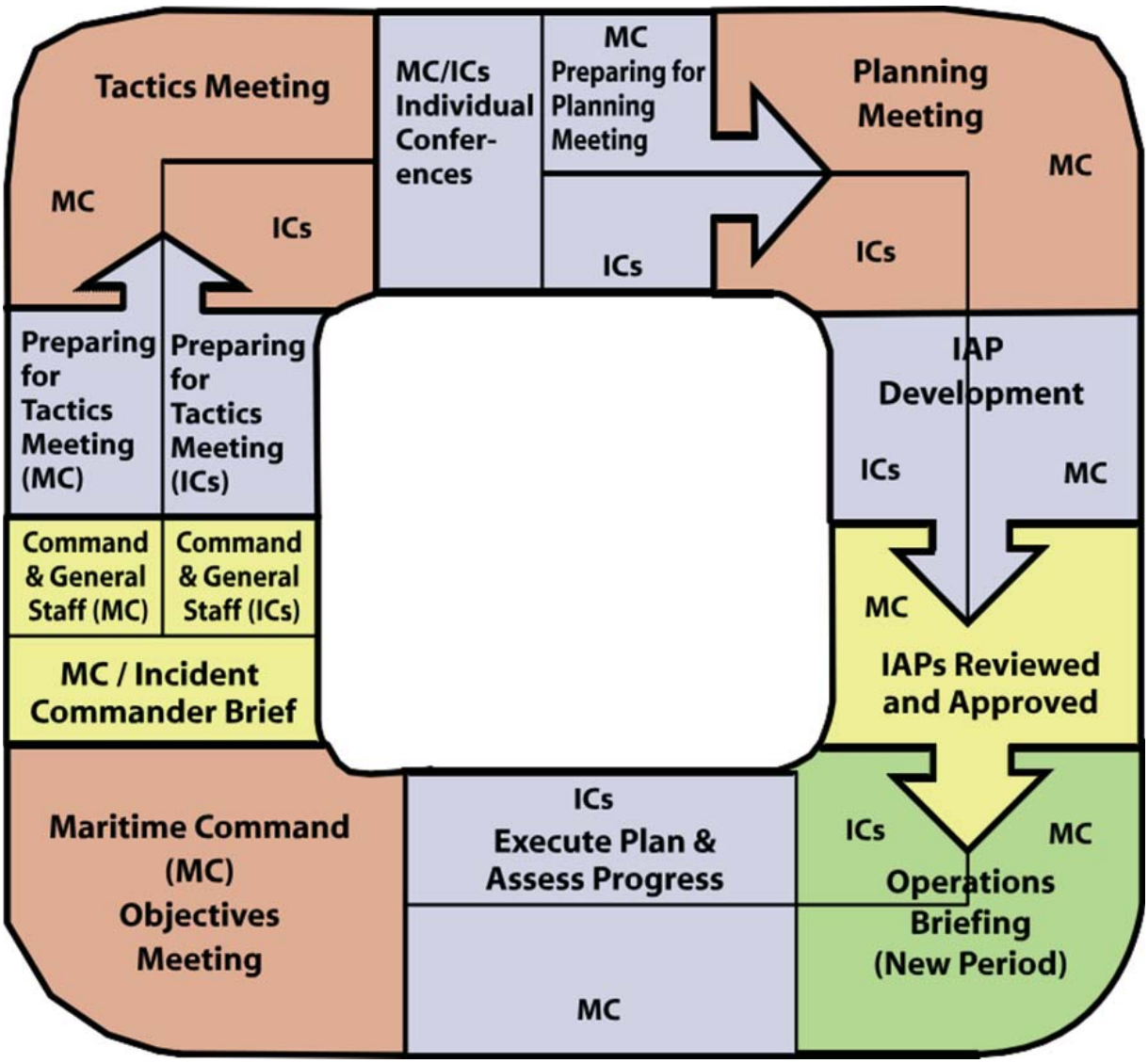

Figure 5: The industry planning cycle and maritime command planning cycle.

Coordinated Field Operations

The maritime command set up several monitoring teams within its operations section. These teams were responsible for ensuring cleanup operations were conducted consistent with regulations such as the National Contingency Plan (Title 40 Code of Federal Regulations, Part 300). The maritime command incident action plan provided detailed specifics on their work assignments.

The MC monitoring teams were dispatched by helicopter from forward operating base Baton Rouge to their respective industry cleanup sites initially on a daily basis. They carried the MC incident action plan for their specific assignment and a copy of the industry IAP for the site they were responsible for. This enabled them to ensure resources were committed and operations occurred at the site as outlined in the

industry IAPs, provided the night before. Additionally, the maritime command monitoring teams, while in the field, worked closely with industry field supervisors on developing strategies and tac- tics for the next operational period, which was fed back to the incident command posts for inclusion in the next day's incident action plans.

After sundown, the MC monitoring teams returned to the maritime command and assisted the second shift in reviewing the industry IAPs. Any discrepancies and last-minute changes were discussed and resolved in unison with industry counterparts. The result was the completion of high-quality and accurate incident action plans for the next operational period.

Command Support

"The Incident Command System worked as designed and CPL believes the results speak for themselves. We reached our objectives by safely responding and removing loose oil in a relatively short period of time." Mr. Tracy Long, Chevron Pipe Line.

The ESF-10 maritime command not only communicated direction to the industry incident commanders, it also provided support for their operations when- ever possible. For example, because no lodging was available for oil spill workers, maritime command was able to obtain berthing vessels from the Katrina joint field office. In one instance, when water and ice were in short supply, emergency airlift assets were deployed to remedy the shortage. Maritime command also established radio towers to improve communications in places where the infrastructure was destroyed. Maritime command coordinated wildlife surveys and rehabilitation services for all the industry partners and worked with concerned agencies and local governments to obtain permits to allow industry ICs to burn oil and oily debris (Figure 6).

Figure 6: Oil burning operations for the removal of oil from a forested wetland. USCG photo.

MC also responded to all other sources of oil pollution, including booming and deployment of oil absorbent material forward of the massive pumping stations used to remove water from New Orleans, to prevent pollution from entering sensitive waters in and around the Mississippi watershed. Perhaps the most important support provided by the maritime command to the field incident commanders was helping them ensure their operations were consistent with the overall objectives for an effective and efficient response.

The ICS/Area Command Advantage

In the midst of Katrina oil spill operations, Hurricane Rita loomed, and eventually impacted the cleanup area. The area command ICS approach was again highly useful, as maritime command and incident commanders began to design uniform hurricane evacuation and reconstitution IAPs. Critical resources were concentrated in priority areas to quickly remove all spilled oil before hurricane landfall, and work assignments drawn up to conduct a rapid assessment upon return to the cleanup area. This enabled the collective response organization to greatly minimize additional Rita environmental impact.

The use of the Incident Command System and area commands maximized information flow, enabling the collective ICs and MC to put together accurate and consistent spill response reports and statistics. This kept the Katrina/Rita response upper echelons such as the joint field office, area field offices and principal federal official fully apprised of the cleanup efforts. Additionally, a joint information center was created that ensured any press releases and interviews from the maritime command were vetted through all the incident commanders in the field. However, it also gave the individual incident commanders the autonomy to complete their own press interviews and press releases for their specific operations.

The operation was not without its glitches. Sometimes communication between monitoring teams and industry group supervisors in the field did not align with proposed incident action plans for the following days. However, the system had enough flexibility built in to ensure these issues were worked out either by teleconferencing or by personal visits to the forward operating base by industry incident commanders.

Another advantage of using ICS is that it works well with existing contingency plans developed by government and industry. It was clear that both had very strong contingency plans that enabled them to reconstitute quickly and marshal resources to begin cleanup operations. Contingency plans allow government and industry to get to the starting point of an incident. They cannot account for all of the variable types of situations, especially a Katrina/Rita complex incident. This is where incident action planning can be a great help; to account for these complex and numerous variables posed before the response organization.

In summary, when governments and industry are faced with the daunting challenge of responding to multiple major events as a result of a natural or human-made disaster, it is best they work from a common operational framework. It is imperative that all players—government, industry, and other non- governmental organizations—have extensive knowledge in and use the system mandated by presidential order for

emergencies: the Incident Command System.

It is a credit to both industry and government that this was indeed demonstrated superbly during the Hurricane Katrina/Rita oil spill response effort. ICS, however, cannot be credited for all the success of the response effort. The efforts of the oil industry incident commanders and their cleanup workforce is an untold story of heroism in itself. Like many residents impacted by the hurricanes, many of these people, from senior management to cleanup personnel were left homeless; had no place of work to go to; no means of transportation; and their lives completely turned upside-down. Yet, despite this incredible impact, they came together and provided the resources and effort needed to successfully combat the oil spills.

The Incident Command System provided the necessary framework to help focus this remarkable human effort. It enabled government and industry to exe- cute an effective and efficient unified command and control system, keeping “pollution catastrophe” off Katrina’s resume of tragic consequences.

“Traditionally the pre-incident infrastructure exists to support both the oil spill response as well as the responder. In this case, neither was available in the affected areas. This unique situation challenged Shell to develop and employ innovative strategies that proved demanding for the field responders, who did the real work to accomplish the daily tactical objectives. In the larger picture, working in conjunction with the agencies at the federal, state, and local parish levels; guided by the tenants of NIMS ICS; and anchored by the hard work and dedication of all the responders (internal/external to Shell) proved to be the right strategy to deal with this unprecedented situation.”

Mr. Gregg Guerreiro, Shell Oil Products U.S.

About the authors:

Mr. Tracy Long attended college at Western Texas College, earning a degree in Applied Science (Law Enforcement) in 1982. He began his career with Chevron Pipe Line Company in 1982 and worked in various operational and maintenance positions in West Texas before transferring to New Orleans as the construction representative for technical services. Mr. Long currently serves as the security/emergency response advisor for all CPL facilities located in the U.S. and Canada.

Mr. Greg Guerriero has been a responder for Shell for many years. He has participated in numerous exercises with the Coast Guard and the Environmental Protection Agency serving in a variety of ICS positions. He was one of several incident commanders for Shell during the Katrina oil spill response.

CDR Laferriere was designated the initial incident specific federal on-scene coordinator for the Hurricane Katrina oil spills. He has 18 years of service with the Coast Guard and at the time was commanding officer of the Atlantic Strike Team at Fort Dix, N.J. He currently serves as deputy sector commander Honolulu, Hawaii.