TITLE: Government Initiated Unannounced Exercises (GIUEs): Developing Response Best Practices to Improve Marine Environmental Response Preparedness

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ABSTRACT ID: 2017-101 – GIUEs: Developing Best Practices to Improve Marine Environmental Response Preparedness

The U.S. Coast Guard (USCG) is authorized by the Oil Pollution Act (OPA) of 1990 to conduct Government Initiated Unannounced Exercises (GIUE), a cornerstone of the oil spill exercise cycle. These exercises are instrumental for USCG Captains of the Port (COTP) to evaluate industry preparedness for oil spill response by specifically testing a facility or vessel on notification procedures, response time, and deployment of facility-owned or Oil Spill Removal Organization (OSRO) equipment. Facility Response Plan holders and Vessel Response Plan holders are subject to these exercises under federal regulations 33 C.F.R. § 154 and § 155.

In 2013, the USCG restructured their GIUE policy to provide better guidance for employees. This updated policy detailed how to properly plan and conduct a GIUE as well as established expectations following both satisfactory and unsatisfactory exercises. In this paper we will examine the changes that the USCG has made regarding its policy on planning and conducting GIUEs, describe how USCG field units are implementing the new policy, including how unsatisfactory GIUEs are addressed, and examine what commonalities, are being seen in GIUE

unsatisfactory results. Finally, we will discuss how plan holders, OSROs, and regulatory agencies can work together to better prepare for responding to an environmental emergency when it occurs.

INTRODUCTION

The USCG is generally the lead federal agency for pollution response of any oil discharge or hazardous substance release in the coastal waters and deepwater ports, and has the responsibility for development and enforcement of regulations to prevent such discharges and releases as part of their Marine Environmental Protection mission. The basic statutory authority for pollution prevention, contingency planning, and response activities within the 200-mile Exclusive Economic Zone for oil and hazardous substances is the Clean Water Act (CWA), as amended by the Oil Pollution Act of 1990 (OPA90). This historical environmental law created a comprehensive prevention, response, liability, and compensation regime to handle vessel- and facility-caused oil pollution to navigable waters within the United States.

One of the requirements placed on facility and vessel plan holders by OPA90 is submission of a Facility Response Plan (FRP) or Vessel Response Plan (VRP) which details actions that will be taken in the event of their response to a worst-case oil discharge or threat of a discharge. The fundamental purpose of a response plan is to prepare the oil industry for an oil discharge or hazardous substance release by coordinating response actions to minimize harm to public health, natural resources, and the environment.

Working in the oil industry does not come without risk; however, risks can be mitigated when parties involved in these operations develop contingency plans to ensure the marine environment is protected from hazards involved in the transportation and transfer of oil. Government Initiated Unannounced Exercises (GIUEs) are one of the critical tools used by environmental regulators, to include USCG, Bureau of Safety and Environmental Enforcement

(BSEE), Environmental Protection Agency (EPA), Pipeline and Hazardous Materials Safety Administration (PHMSA), and they improve local and regional preparedness.

What is a GIUE and how are they used? Government Initiated Unannounced Exercises (GIUEs) are essentially no-notice exercises designed to measure a facility plan holder or vessel plan holder's readiness by observing the plan holder's initial response actions to an Average Most Probable Discharge (AMPD) and verify the plan holder can effectively activate its response plan to a simulated discharge scenario. The first and foremost objective and evaluation criteria is safety during the exercise. Response actions shall comply with all company, government, and regulatory standards throughout the entire exercise. Additionally, the ability to properly execute notification procedures in accordance with the applicable response plan and execute spill response actions with appropriate type and amount of equipment suitable for the scenario shall be demonstrated in a timely manner.

There are several benefits gained by conducting GIUEs. The primary benefit a plan holder gains for participating in a GIUE is verification of their own ability to respond to an oil spill. Along with this assurance, plan holders can increase interpersonal relationships with regulators prior to an actual event. Furthermore, if a GIUE is determined to be satisfactory in a USCG-led exercise, the plan holder will be exempted from another USCG-led GIUE for 36 months and will receive credit for three other exercises in accordance with the National Preparedness for Response Exercise Program (PREP) Guidelines (PREP, 2016). The benefits regulatory agencies gain are an awareness of plan holder's emergency procedures and local Oil Spill Removal Organizations (OSRO) capabilities as well as opportunity to strengthen interagency and industry partnerships.

DISCUSSION

Importance of GIUEs

Spill response effectiveness can significantly impact the extent of environmental damage and costs associated with cleanup. The longer it takes for the spill response team to coordinate the response, the greater the probability that oil will have spread potentially affecting a larger area and further damaging additional natural resources. Training and experience are key factors in effectiveness of spill response. Simply stated, when spill response teams practice response actions in either simulated or actual oil discharge scenarios, the better the results with respect to effectiveness of the response. Participating in a GIUE provides plan holders, OSROs, and the entire spill response team an opportunity to demonstrate their planned actions in response to a simulated AMPD, as these exercises test the oil spill response capabilities of the contracted OSRO and response plan holders in the United States maritime industry.

In short, for the protection of public health and preservation of the environment, federal regulations require facility and vessel plan holders to develop a response plan to properly respond in the event of an oil discharge; and GIUEs test the implementation of those response plans during a no-notice basis under 33 C.F.R. § 154 and § 155. With the recent revitalization of the USCG's GIUE Program, there are now more detailed resources available to agency employees for properly designing, planning, and conducting these critical exercises.

History of USCG GIUE Program

The intention of the USCG's GIUE program is to test the readiness of vessel and/or facility plan holders and their OSRO(s) in response to an AMPD scenario. An AMPD means a discharge of the lesser of 50 barrels or 1 percent of the volume of the worst-case discharge during cargo transfer operations from a Marine Transportation-Related facility (MTR facility) or

tank vessel (33 C.F.R. § 154.1020). A MTR facility refers to any onshore facility or segment of a complex including piping and any structure used or intended for use in transfer of oil to or from a vessel; these facilities are regulated under section 311(j) of the Federal Water Pollution Control Act (FWPCA) by two or more Federal agencies and are subject to regulation under 33 C.F.R. § 154 and any deepwater port subject to regulation under 33 C.F.R. § 150.

Criteria that is tested during a GIUE includes: VRP and FRP plan notification procedures, OSRO response time to the incident location, and deployment equipment -- either MTR facility-owned or OSRO equipment. Typically, GIUEs are conducted on a no-notice basis, however, while they are no-notice for industry, plan holders should be aware of the possibility of occurring at their facility at any given time.

Conducting GIUEs has been a responsibility of the USCG for several years, however, there has been a significant decrease in the number of GIUEs conducted over the last decade. While there is no clear reason as to why this decrease occurred, we do know that during this time there was an increase in maritime security initiatives (USCG, 2002) and the previous GIUE program lacked strong guidance and consistency (USCG, 2013 and USCG, 2015), which may have contributed to the overall decrease of GIUEs conducted by Sectors and MSUs nationwide. Prior to 2013, USCG guidance on conducting GIUEs was only provided in policy via the PREP Guidelines and was not as detailed as it is today. Issues with USCG GIUE Program prior to current policy include:

- Decrease in the overall numbers of GIUEs conducted USCG-wide,
- GIUEs were conducted improperly and documented incorrectly,
- GIUE criteria lacked consistency and standardization in design and evaluation the exercise, and
- GIUEs were limited to 4, either tank vessel and/or MTR Facility, per year within their respective COTP Zone.

In April 2013, the Office of Marine Environmental Response Policy (CG-MER) at USCG Headquarters updated the USCG's GIUE program by clarifying Sector level roles and responsibilities, clarifying the procedures for selecting GIUE candidates, and providing specific execution guidelines (USCG, 2013). While the revitalization of the USCG's GIUE Program began in 2013, it was further updated in 2015 and continues to be reviewed, discussed, and updated as needed to strive for nationwide standardization and provide agency specific direction to conducting exercises in line with the existing National Preparedness for Response Exercise Program (PREP). It is important to note that the updates to the USCG's GIUE Program did not impose new regulatory or legal requirements on industry, but rather, it brought:

- Clear expectations of COTP to ensure completion of the required number of GIUEs per year based on the number of MTR facilities within each COTP Zone,
- Development of a GIUE Implementation Workbook which provides guidance on GIUE design, execution, documentation, outreach, as well as worksheets and templates for pre- and post-exercise, and
- Standard criteria for evaluation and documentation.

Additionally, this updated policy aims to prevent unnecessary costs to industry, promotes collection and documentation of accurate compliance data that fosters cooperation, and supports the USCG's marine environmental response preparedness goals.

CG-MER's updated GIUE policy implements an aggressive program management posture as summarized in Table 1, and includes tracking GIUE-related metrics and better enforcement. Furthermore, the guidance provides uniform procedures for reporting and documenting exercises conducted at the Sector level, reviewed at the District level, and tracked and monitored at the Headquarters level. This new guidance also allows units to track and monitor the satisfactory and unsatisfactory results in a more comprehensive manner than before.

The most recent concerns involving GIUEs pertain to Vessel Response Plan exercises and were posed and addressed in the Marine Safety Information Bulletin 12-16. These questions included 1) non-tank vessels (NTV) being subject to GIUEs since AMPD coverage only applies to tank vessels and 2) concerns over GIUEs conducted on tank vessels while moored at a MTR facility for loading or bunkering operations. In accordance with Federal Regulations, PREP Guidelines and MER Policy Letter 01-15 Change 1 (GIUE Policy), NTV's are typically exempt from GIUEs. However, if a NTV is carrying oil as cargo, then these vessels can be subject to a vessel-source discharge GIUE and would have to comply with the regulations of having AMPD coverage. For this reason, USCG units must consider the NTV's status during the exercise design process. With regards to GIUEs on tank vessels, the USCG will not conduct a GIUE of a tank vessel moored at a MTR for a vessel-source discharge scenario.

Table 1. Coast Guard GIUE Policy Summary

Dimension	Pre-2013 CG Policy	Post-2013 CG Policy
Coast Guard Policy	Limited.	Developed in 2013 and updated in 2015; updated as needed.
Number of Required GIUEs	Limited to 4 annually.	*Total based on the number of MTR Facilities within each COTP Zone; Ranges from 1 to 4 annually.
Guidance	PREP Guidelines.	Implementation Workbook provides guidance from Outreach to Evaluation and everything in between.
Evaluation Procedures	Inconsistent.	Standard Criteria.
Documentation	Inconsistent.	Metrics tracked at various CG levels.

*Note: New USCG GIUE Policy states the number of required GIUEs refers to the number of Plan Holders. This is designed to eliminate the confusion on how to count any repeat GIUEs with the same Plan Holder if the initial GIUE conclude with an unsatisfactory result.

Implementation Process

While GIUEs are intended to be no-notice for plan holders, GIUEs do require a significant amount of forethought and planning prior to being conducted. The implementation of the USCG's revitalized GIUE Program states GIUE planning should involve cooperation among three distinct offices at the Sector level: Incident Management Division and Contingency Planning/Force Readiness Division of the Response Department and the Facilities Inspections /Port State Control Division of the Prevention Department (USCG, 2015). Coordination by the Federal On-Scene Coordinators (FOSCs) among these three divisions is crucial for designing, planning, and execution of the GIUE.

The USCG can and should make efforts to conduct joint GIUEs with the BSEE and EPA, as these exercises provide COTPs an opportunity to partner with other federal and state agencies/organizations that share jurisdictions and have mutual responsibilities for regulating the oil industry. Joint GIUEs conducted by two or more regulatory agencies are ideal compliance activities because they allow regulatory agency partners to evaluate the readiness of OSROs to deploy their equipment during a realistic scenario and fulfill contracted obligations to their plan holders. Finally, joint GIUEs afford federal agencies opportunities to engage with and partner together, which are excellent strategies for leveraging scarce resources and they provide a more holistic evaluation of industry preparedness.

Perspectives from the Field

In 2015 the USCG developed a new warrant officer rating, Marine Safety Specialist Response (MSSR), tasking them with the responsibility of overseeing GIUEs conducted at their respective units. In interviews conducted with MSSRs regarding the implementation of GIUEs we developed a clearer understanding of issues seen in the field. The issues include the

education of OSROs in proper equipment deployment during a GIUE, logistical issues regarding both Tank and NTV GIUEs, and post exercise actions for unsatisfactory GIUEs.

Several MSSRs identified that in the initial year of the updated GIUE policy, a majority of the facilities demonstrated knowledge of the program and the actions necessary to execute one satisfactory. When GIUEs were conducted at several facilities, early unsatisfactory results occurred due to the contracted OSRO bringing inadequate equipment or failing to properly deploy equipment required for the response of an AMPD. This gap between facility and OSRO knowledge can be attributed to the lack of an outreach program between the COTP and OSROs. Currently, USCG policy recommends COTPs send notification letters to all facility plan holders within their COTP Zone which are subject to a GIUE advising plan holders of their regulatory responsibilities. The Implementation Workbook provides a template for this type of notification letter, however there is not a similar notification template provided for OSRO counterparts, upon which plan holders depend on for satisfactory GIUE completion. Many facility plan holders ensured USCG regulators that they had communicated to their OSROs the expectations for equipment deployment during a GIUE, yet some GIUEs resulted in unsatisfactory completion due to equipment deployment issues. Fortunately, it appears that unsatisfactory results (due to OSRO unawareness of the GIUE program) sharply declined following several exercises conducted within each port.

The current GIUE policy identifies the possibility of conducting an exercise on a Tank/Non-Tank VRP. MSSRs have pointed out that while the facility guidance is clear and streamlined, the vessel portion does not address the difficulties that arise during exercise planning. By the end of fiscal year 2016, there had only been 2 GIUE's conducted on a vessel, which may be attributed to the difficulty in selecting a vessel with enough lead time to get the requisite COTP approval and then conducting the exercise safely within a port.

The current policy for unsatisfactory GIUEs as outlined by PREP Guidelines presents options for agencies, but leaves discretion to each agency for developing specific policies. Interviewees expressed that the USCG policy did not clearly describe what actions should be taken during unsatisfactory exercises prior to the release of ALCOAST 304/16. The policy now directs the USCG to conduct additional GIUEs at a facility. If the discrepancy is with the OSRO performance, then the unit may decide to conduct a GIUE on a different plan holder who contracts with that same OSRO. This conflicted with the PREP Guidelines restrictions on GIUE frequency per COTP area, a maximum of 4 per year, and the need to exercise both unsatisfactory plan holders and ensure that other required exercises are being conducted. Clarification to policy states that a COTP may conduct more than 4 exercises per year, but no more than 4 unique plans shall be exercised.

GIUE Results – A Year In Review and Lessons Learned

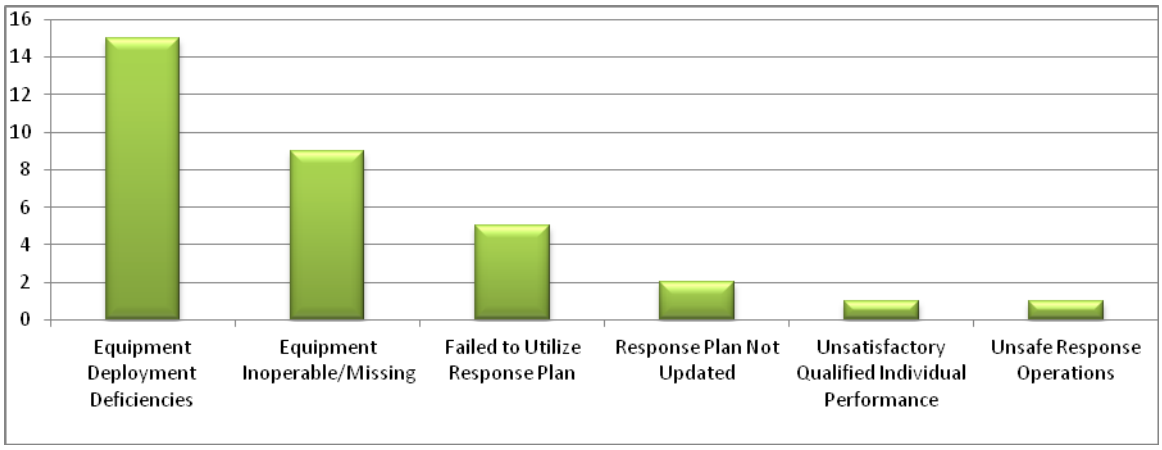
The USCG reported that in fiscal years 2015 and 2016, GIUEs resulted in a 15 percent and 21 percent unsatisfactory rate, respectively. This updated policy and full year of implementation has provided us with a complete data set for the 152 GIUEs conducted throughout the fiscal year 2016, which started in October 2015 and ended in September 2016. This data contains the results of these exercises, as well as the reasons for unsatisfactory exercises.

Since the implementation of the revitalized GIUE, 123 satisfactory GIUEs were performed with no deficiencies issued. The definition of a deficiency, as stated in the policy, are components which are being tested during the exercise, not including deficiencies which inspectors may note in accordance with 33 CFR § 154 and § 155 for facilities and vessels respectively. The facility or vessel that is being exercised may have deficiencies that the personnel executing the GIUE have determined to not have been egregious enough to warrant

the exercise being classified as unsatisfactory. Of the GIUEs conducted only 4 were deemed to have met the criteria for this category.

The remaining 24 GIUEs were deemed to have been unsatisfactory by the personnel who conducted them, with deficiencies being noted as primarily consisting of Equipment Deployment Deficiencies, and second most common occurrence being Inoperable or Missing Equipment. Figure 1 illustrates fully the deficiencies noted as being the primary causative factor in the unsatisfactory notation in the exercise documentation. Note: These are for USCG-led GIUEs conducted during fiscal year 2016.

Figure 1. Deficiencies in Unsatisfactory GIUEs



Case Studies

As mentioned, of the GIUEs conducted, only 2 were conducted on a Vessel Response Plan due to several reasons expressed by subject matter experts in the USCG. The primary reason being that USCG policy states a vessel cannot be exercised if it is moored to a facility or conducting transfer operations. This means that a vessel GIUE, if it is to be conducted, may only be done while the vessel is at anchor in the port. Looking at this limitation through the

planning lens, it is apparent that planning a vessel GIUE within an appropriate timeframe poses significant challenges for some USCG units.

The current exercise planning timeframe for an exercise is between two to four weeks prior to the exercise execution. This timeframe is necessary to ensure concurrence between the 3 departments -- Incident Management Division, Contingency Planning/Force Readiness and Facilities Inspections Division/Port State Control Divisions, who are required to approve a GIUE plan at a USCG Sector prior to its execution. After interdepartmental concurrence is reached, the plan must then be approved by the Captain of the Port at the location where the exercise is to take place. This series of approvals is practical for facility GIUEs given their static physical location within the port, however, this same process has proven to be much more difficult when applied to a vessel GIUE.

Subject matter experts interviewed voiced a concern that the existing policy does not give enough specific instruction to safely conduct a vessel GIUE. The policy itself does not identify operational safety measures to be taken during a vessel GIUE. The addition of conducting booming operations as well as deploying an oil recovery device, as per the policy, becomes significantly more complex when conducted on water, an issue that is not commonly seen while deploying in what is usually the sheltered waters of a facility pier.

Another series of questions asked of USCG subject matter experts involved the education of the industry as a whole, in regards to the policy as it affects them. USCG members involved in conducting GIUEs indicated that the outreach done by the COTP, is through the distribution of educational materials and presentations conducted at various stakeholder meetings such as the Regional Response Team and Area Committee Meetings which are conducted on a regular basis. These are excellent opportunities to engage in discussions with industry who might have

questions regarding GIUEs. Other outreach methods include COTPs issuing Marine Safety Information Bulletin (MSIB) or letters to plan holders, OSROs, and vessel agents.

GIUE Team members from USCG units did note concerns in the policy awareness of local OSRO's and how a lack of knowledge regarding equipment requirements affected a facility plan holder's performance in many of the unsatisfactory GIUEs documented in 2016. The outreach to facility- and vessel plan holders of the GIUE program has not been mirrored when it comes to OSRO education, as there is no standard or discussion for outreach to these participants identified in the policy. If outreach is to be conducted, it should be noted that the OSROs need to have a familiarity with their contracted facilities and vessels that may extend beyond what has been previously expected. As previously pointed out, most unsatisfactory GIUEs have been due to equipment, either as inoperable or inadequate, being brought to the facility by their contracted OSRO.

Looking at the information available to us, it is difficult to ascertain whether the equipment failures are caused by a *lack of communication* or a *lack of available resources*. Communication between the facility being exercised and the OSRO is critical for the success of a GIUE. If the OSRO equipment is not ordered as per the requirements for an AMPD outlined in 33 C.F.R. § 154, the OSRO may not have the foresight to bring additional equipment on scene. Another aspect affecting this is the difference between regulatory requirements and practical response tactics that OSROs have developed. An example of this would be when the facility being exercised has a particularly low AMPD, one instance was only 10 gallons. The facility then contacts the OSRO and places an order to bring enough equipment to remove the discharge as it is simulated in the GIUE. The OSRO then follows what would be standard protocol for a 10-gallon discharge of oil and brings out 200 feet of containment boom and a package of absorbent pads. While this amount of equipment would be considered adequate for a real-world

response by the On-Scene Coordinator (OSC), it fails to meet the facilities GIUE requirements of deploying 1,000 ft of containment boom within an hour and then deploying an oil removal device within 2 hours.

Interviewees noted that due to the small amount of OSROs within their area, these initial failures have proven educational to the OSRO and ensured that further GIUEs did not have the same equipment deficiencies. While this provides valuable lessons learned for OSROs in terms of GIUE expectations, it comes at a significant cost to the facility, who in addition to ordering resources for the initial GIUE, can now expect a follow up GIUE in the near future, incurring an additional cost than would be expected by the current standards for exercise frequency. In addition to the financial cost incurred, many facilities try to maintain a good standing with regulatory entities and the record of an unsatisfactory GIUE may be seen as undesirable in terms of their history and reputation in the area. These issues have been mitigated in some ports by reaching out to OSROs and informing them of the equipment expectations ahead of time, a proactive measure beyond the engagement currently dictated by policy.

CONCLUSIONS

The Future of USCG GIUEs

With the recent development of new USCG guidance designed to provide better clarification, two questions come to mind:

- How can the USCG continue to improve the GIUE program?
- How do we use GIUEs to link other MER preparedness activities (i.e. OSRO Classification Program, Preparedness Assessment Visit (PAVs), PREP)?

The USCG continues to review its GIUE program and has proposed several ideas for improvement. Policy suggests all USCG units conduct their required number of GIUEs year-

round in accordance with the expectations published annually in ALCOAST Message and improving reporting methods are at the top of the list. Furthermore, conducting VRP/Mobile FRP GIUEs and joint GIUEs with partner agencies such as EPA, PHMSA, and / or BSEE as appropriate would be a great way to gain a different perspective. When two or more federal agencies conduct joint GIUEs, it not only limits redundancies involved in multiple exercises, it also can reduce the burden on industry. Additionally, USCG policy needs further development to help provide clearer guidance for GIUEs involving non-floating oil. Finally, USCG units should consider initiating an outreach program specifically for OSROs and vessel agents so all parties subject to or involved in GIUEs are aware of requirements and performance expectations. The outreach could be similar to the letters COTPs provide to plan holders and with respect to OSROs, follow-up discussions could be held by the units when conducting Preparedness Assessment Visits (PAVs).

With respect to using GIUEs to link other Marine Environmental Response (MER) preparedness activities (i.e. OSRO classifications, PAVs, PREP), the USCG suggests units contact Shore Infrastructure Logistics Center (SILC) and the National Strike Force Coordination Center when there are issues with a Basic Ordering Agreement (BOA) company / Classified OSRO. In circumstances when the USCG unit suspects poor performance from an OSRO, it would be useful to utilize GIUEs as a way to target deficient OSROs.

Without a doubt, GIUEs are a critical tool for both regulators and plan holders to assess readiness for responding to an oil discharge and for analyzing a response plan. When plan holders and OSROs participate in GIUEs, they are not just complying with federal regulations, they are gaining valuable knowledge, skills, and experience necessary to improve spill response effectiveness. When all parties work together during environmental emergencies, they can help minimize harm to public health, natural resources, and the environment.

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