



Strategy for Waterside Security of Especially Hazardous Cargo

September 01, 2015



U. S. Coast Guard

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Foreword

September 01, 2015

I am pleased to present the following report, “Strategy for the Waterside Security of Especially Hazardous Cargo,” which has been prepared by the U.S. Coast Guard.

This report responds to Section 812(b) of the *Coast Guard Authorization Act of 2010* (Pub. L. No. 111-281), which directs the Coast Guard to develop a strategy for the waterside security of vessels carrying, and waterfront facilities handling, especially hazardous cargo. The strategy utilizes the results of the May 14, 2012, “Waterside Security of Especially Hazardous Cargo National Study Results.”



Pursuant to congressional requirements, this report is being provided to the following members of Congress:

The Honorable John Thune
Chairman, Senate Committee on Commerce, Science, and Transportation

The Honorable Bill Nelson
Ranking Member, Senate Committee on Commerce, Science, and Transportation

The Honorable Bill Shuster
Chairman, House Committee on Transportation and Infrastructure

The Honorable DeFazio
Ranking Member, House Committee on Transportation and Infrastructure

The Honorable Michael McCaul
Chairman, House Committee on Homeland Security

The Honorable Bennie G. Thompson
Ranking Member, House Committee on Homeland Security.

I am happy to answer any further questions you may have, or your staff may contact my Senate Liaison Office at (202) 224-2913 or House Liaison Office at (202) 225-4775.

Sincerely,

A handwritten signature in blue ink that reads "Paul F. Zukunft".

Paul F. Zukunft
Admiral, U. S. Coast Guard
Commandant

Executive Summary

The *Coast Guard Authorization Act of 2010* (Pub. L. No. 111-281), Section 812, directs the Coast Guard to develop, in conjunction with appropriate federal agencies, a national strategy for the waterside security of vessels carrying, and waterfront facilities handling, especially hazardous cargo. This strategy is based on the *Waterside Security of Especially Hazardous Cargo National Study Results*, delivered to Congress on May 14, 2012. The study identified measures to improve the security of maritime transportation of especially hazardous cargo and evaluated the waterside security of vessels carrying, and waterfront facilities handling, especially hazardous cargo.

The *Strategy for the Waterside Security of Especially Hazardous Cargo* establishes the framework by which the federal government, led by the Department of Homeland Security, addresses risks to the Marine Transportation System posed by a waterside attack or other maritime incident causing a release involving especially hazardous cargoes.

Although the likelihood of an attack or other incident that creates a release is low, a successful attack on the nation's Marine Transportation System, especially where it involves especially hazardous cargoes, could cause significant injury and loss of life, as well as damage to critical infrastructure and key resources. The high consequence nature of such an incident underscores the importance of developing, implementing, maintaining, and periodically reviewing and modifying existing security and safety policies, as well as requirements to address especially hazardous cargo.

Responsibility for waterside security of especially hazardous cargoes is shared between facility and vessel masters, owners, operators and agents, as well as DHS and its partners in the private and public sectors. DHS has taken an approach incorporating especially hazardous cargoes as part of a larger all-hazards protection scheme.

Underlying this *Strategy for the Waterside Security of Especially Hazardous Cargo* is the recognition that these cargoes are important to the Nation's economy. This strategy seeks to reduce risk while considering all costs and promoting economic growth.



Strategy for the Waterside Security of Especially Hazardous Cargo

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I. Legislative Language

This report responds to the language set forth in Section 812(b) of the *Coast Guard Authorization Act of 2010* Pub. L. No. 111-281, § 812(b), 124 Stat. 2905, 2997 (2010), which states:

“(b) NATIONAL STRATEGY.—Not later than 6 months after submission of the report required by subsection (a), the Secretary of the department in which the Coast Guard is operating shall develop, in conjunction with appropriate Federal agencies, a national strategy for the waterside security of vessels carrying, and waterfront facilities handling, especially hazardous cargo. The strategy shall utilize the results of the study required by subsection (a).”

II. Introduction

Large quantities of especially hazardous cargoes are transported, transferred, and stored throughout the United States’ Marine Transportation System¹ every day. Though liquefied natural gas has received the most national attention, other dangerous commodities regularly traverse the Marine Transportation System. These cargoes are crucial to industry and the manufacturing of many products. They also possess the potential for catastrophic consequences if discharged or released. A recent study² of especially hazardous cargoes showed that vessels carrying these cargoes in bulk make thousands of transits annually to coastal and inland waterside facilities. While the majority of transits occurred in the Gulf of Mexico region and along inland rivers in America’s heartland, especially hazardous cargo transits, transfers, and storage currently take place in every region of the country except the Great Lakes.

Congress directed the Coast Guard to base the strategy on the results of the national study, delivered to Congress on May 14, 2012. The study identified measures to improve the security of maritime transportation of especially hazardous cargo and evaluated the waterside security of vessels carrying, and waterfront facilities handling, especially hazardous cargo.

The *Strategy for the Waterside Security of Especially Hazardous Cargo* seeks to guide, prioritize, and synchronize efforts to provide waterside security for Especially Hazardous Cargo vessels and associated operations taking place at U.S. ports. It promotes responsible stewardship and reflects a coordinated maritime approach led by Coast Guard under the direction of the DHS. The Strategy seeks to mitigate the risk within the Maritime Transportation System associated with an attack

¹ The U.S. Marine Transportation System encompasses a network of navigable waters, publicly and privately-owned vessels, port terminals, intermodal connections, shipyards, vessel repair facilities, and a trained labor pool operating and maintaining this infrastructure. The 2008 National Strategy for the Marine Transportation System defines the Marine Transportation System as the network of navigable waterways, ports, intermodal connections, and landside connections that support maritime commerce

² United States Coast Guard, Commodity Flow Study, Certain Dangerous Cargoes, 27 January 2011

This report provides a summary of the flow of Certain Dangerous Cargoes (CDCs) throughout the coastal and inland waters of the United States. The report focuses on identifying the flow of bulk shipment of CDCs, including, the sources of production, distributors, control points, stockpile locations and various distribution channels.

against the transport and waterside transfer and storage of especially hazardous cargo in bulk³ in the most cost-effective manner possible.

The Strategy articulates a framework which incorporates especially hazardous cargo⁴ into DHS' all-hazards risk assessment and mitigation processes. The Coast Guard will lead efforts to implement this strategy, employing existing authorities, regulatory requirements, and voluntary standards. In addition, the strategy is modeled after certain tenets of the President's Executive Order 13650, Improving Chemical Facility Safety and Security, including information sharing and collaboration with state, tribal and local partners. It will improve waterside security of vessels carrying especially hazardous cargo.

III. Our Strategic Goals

We seek to protect the vessels carrying, and waterfront facilities handling, especially hazardous cargo. The Strategy has four goals with respect to the federal role in waterside security:

Goal 1: Working with port partners, contribute to real-time national, regional, and local awareness of the location of especially hazardous cargoes, and the potential threats and consequences associated with a waterside attack or other maritime incident on the Marine Transportation System involving especially hazardous cargoes.

Improved awareness better protects the Marine Transportation System from risks associated with an attack or other incident causing release. The Coast Guard, and related stakeholders, will contribute to awareness by developing a tool for modeling the risks associated with especially hazardous cargo activities within each port, Captain of the Port zone, U.S. Coast Guard District, and nationally. The risk-modeling tool will incorporate especially hazardous cargo vessel transit information, maritime intelligence assessments of the likelihood of an attack, current locations of available protection and response assets, population size and critical infrastructure locations within key maritime areas, and plume models that both capture local weather, tide and current information and the impacts of the discharge⁵ or release⁶ of each especially hazardous cargo. To gather this critical sensitive information⁷ the Coast Guard will:

- Consider promulgating rules requiring advance notice of arrival, movement, and transfer for especially hazardous cargo vessels and regulated waterfront facilities in and around U.S. waters to allow sufficient time for U.S. Coast Guard Sector Commanders to apply risk mitigation measures;
- Track the location of especially hazardous cargo vessels, transfers, and storage sites to assess the location of nearby vessels and other threats to them; and

³ Material in any quantity that is shipped, stored, or handled without benefit of package, label, mark, or count and carried or stored in integral or fixed independent tanks.

⁴ The Coast Guard Authorization Act of 2010 (P.L. 111-281) defined Especially Hazardous Cargo as the following bulk commodities: anhydrous ammonia, ammonium nitrate, liquefied chlorine gas, liquefied natural gas, liquefied petroleum gas, and any other substance which the Secretary determines, by regulation, to pose significant risk of creating a transportation security incident.

⁵ A discharge is the escape of especially hazardous cargo on or in the navigable waters of the United States

⁶ A discharge is the escape of Especially Hazardous Cargo on or in the navigable waters of the United States and a Release is the escape of Especially Hazardous Cargo into the air.

⁷ Information deemed to be Sensitive Security Information, Protected Critical Infrastructure Information, or otherwise restricted will be protected accordingly.

- Research historical maritime terror incident tactics and maritime and land-based terror incidents involving especially hazardous cargoes to refine risk assessment models.

Goal 2: Work with port partners to assess the vulnerability and potential consequences to the Marine Transportation System of waterside attacks or other maritime incidents on vessels and facilities carrying, transferring, and/or storing especially hazardous cargoes and mitigate this vulnerability through risk-based prevention and/or protection measures.

It is not feasible to rely on public resources to escort every vessel transporting or transferring especially hazardous cargoes in the U.S. Marine Transportation System. The Coast Guard and related stakeholders will use the Maritime Security Risk Analysis Model to determine when it will deploy its assets. To help owners/operators engaged in especially hazardous cargo activities reduce their vulnerabilities, the Coast Guard will take the following steps to increase the capability to identify, deter and interdict:

- Provide teams conducting especially hazardous cargo vessel escorts and/or other operational risk reduction measures with the training and equipment required to identify and interdict threats, and the personal protective equipment and training to be prepared in the event of an especially hazardous cargo discharge or release;
- Assess the local availability of deployable resources for operational risk reduction measures and response and recovery assets in each port;
- Identify potential cyber security vulnerabilities to especially hazardous cargoes and encourage owners/operators to address those vulnerabilities;
- Improve information sharing with state, local, tribal, and territorial government and trade and carrier group partners to communicate risks and to coordinate attack prevention and protection measures; and
- Expand existing DHS contingency planning and exercise requirements to include especially hazardous cargo attack and release scenarios.

Goal 3: Improve DHS response capabilities and coordination that would mitigate the impact of an attack or incident.

Understanding the potential impact of a discharge or release of an especially hazardous cargo on populations in close proximity to the Marine Transportation System and on maritime critical infrastructure and key resources is a key component of maintaining sufficient capacity to respond rapidly in a coordinated manner.

The Coast Guard, and related stakeholders, will take the following steps to develop, maintain, and assess a rapid response capability that coordinates public and private sector resources to national standards for response to a maritime release of especially hazardous cargoes:

- Standardize recommended training and equipment lists for all state, local, tribal, and territorial government and private sector partners engaged in responses to maritime releases or discharges of especially hazardous cargoes;
- Standardize national, state, local, tribal, and territorial response plans to include water and air plume models for all especially hazardous cargoes;
- Exercise response protocols on a regular basis to ensure adequacy of public and private resources;

- Develop chemical plume models for each especially hazardous cargo that can incorporate especially hazardous cargo vessel location and National Weather Service weather, tide, and current information;
- Conduct an inventory of state, local, tribal, and territorial response resources and capabilities to incorporate into the risk-modeling tool; and
- As appropriate, control the volume of especially hazardous cargoes transiting during periods of elevated maritime security levels, specifically in response to threats against vessels carrying especially hazardous cargo.

Goal 4: Promote state, local, tribal, and territorial capabilities for Marine Transportation System recovery from waterside attacks or other maritime incidents on vessels and facilities carrying, transferring, and/or storing especially hazardous cargoes, and continually assess that capability.

The ability to reduce the time between an especially hazardous cargo release and the return to normalcy through recovery efforts mitigates the consequences of a waterside attack or other maritime incident causing a discharge or release. The Coast Guard, working with relevant stakeholders, will do the following to optimize the coordination and efficiency of public and private sector recovery and resiliency resources:

- Encourage state, local, tribal, and territorial recovery and resiliency plans to align with national response and recovery protocols;
- Assess the degree of infrastructure redundancy;
- Assess the consequences of an Especially Hazardous Cargo release on local populations, including casualties and economic impact;
- Identify target levels for post-incident commerce and maritime transportation activity, critical pathways for cargo flow, and the steps necessary to expedite the return of the Marine Transportation System to pre-attack or pre-incident conditions.

IV. Our Strategic Approach

Our approach to achieving these goals is galvanizing action within and beyond the Federal Government to effectively focus our efforts on those enhancements that result in the most significant reduction of risk. Our approach is informed by the following guiding principles:

- Apply a risk management doctrine that supports assessing the risk of an attack or other incident on the Marine Transportation System involving especially hazardous cargoes and mitigates that risk to the fullest extent possible;
- Share risk information with public and private sector stakeholders while protecting sensitive security information, protected critical infrastructure information, and other categories of information from unauthorized disclosure;
- Work with port partners to mitigate risk to the Marine Transportation System while minimizing impact and costs on the private sector, and other modes of the transportation system may not be in the best interests of the nation;
- Implement operational risk mitigation measures at the local level; maintain consistency in those measures across geographic regions;

- Prioritize allocation of federal assets to ensure efficient risk mitigation;
- Promote the highest levels of training and qualification for stakeholders involved in especially hazardous cargo security;
- Ensure stakeholders involved in response activities provide their responders with appropriate training and personal protection; and
- Leverage existing safety, security, and environmental programs to address the full range of hazards potentially threatening especially hazardous cargoes in achieving this Strategy's goals.

V. The Path Forward

We will immediately implement this Strategy to address waterside security challenges. In the near term, we will focus our efforts on the following priority action areas:

- Align federal activities across the Department of Homeland Security, the Department of Transportation, and other federal agencies as needed to support the goals of the Strategy;
- Leverage existing forums and coordination bodies to the maximum extent possible, and explore ways to promote a unified federal approach for identifying and responding to risks associated with especially hazardous cargoes, including close cooperation with the Chemical Facility Anti-Terrorism Standards program;
- Work with port partners to employ operational risk reduction measures to interdict threats against especially hazardous cargo vessels;
- Restrict other vessel traffic on waterways when especially hazardous cargo vessels are transiting them;
- Consider developing regulations, or encouraging industry standards, that would provide additional protective structural methods in vessel and facility construction to strengthen the cargo envelope and increase its ability to withstand attack;
- Improve intelligence gathering to assess the likelihood of an attack on especially hazardous cargo-laden vessels or facilities;
- Review Coast Guard required personnel screening procedures to assess whether all those with proximity access to especially hazardous cargo operations are appropriately vetted;
- Update port and waterway threat assessments to refine our understanding of the threats and risks associated with the transportation, transfer, and storage of especially hazardous cargoes;
- Improve and exercise Area Maritime Security Plans and Area Contingency Plans to address especially hazardous cargo risks as appropriate; and
- Support the research and development of safer alternatives for especially hazardous cargoes to reduce the risk associated with deliberate attacks or release.

Promulgation of an Implementation Plan will begin immediately upon the Strategy's release. To manage risks, we will work to:

Understand and address vulnerabilities to the supply chain. We will focus our efforts on those risks that can bring the most harm to American citizens or threaten the functionality of the supply chain.

Utilize layers of security to protect against a diverse range of traditional and asymmetric threats. These layers include: intelligence and information analysis; appropriate use of technology; our laws, regulations, and policies; properly trained and equipped personnel; and effective partnerships.

Adapt our security posture to meet evolving threats. We will work to promote a dynamic and flexible risk management approach that prioritizes actions.

VI. Conclusion

We will build upon the solid foundation of previous efforts to enhance coordination with our port partners and encourage their efforts to reduce waterside vulnerabilities associated with these cargoes. The securing and safeguarding of especially hazardous cargoes will support reliable movement of these cargoes within our domestic borders and will reduce the risk of disruption to our waterways.