

MTS TASK FORCE PRESENTATION

Implementation of Risk Assessment

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It is a pleasure to be here to lead this federal panel. We are going to present an overview of implementation of risk assessment in the federal government, by a series of regulatory agencies, including the U.S. Army Corps of Engineers, the National Oceanic and Atmospheric Administration, the Maritime Administration, the Minerals Management Service, and the U.S. Environmental Protection Agency.

Although people readily accept the concept of risk management in the marine transportation system as a good idea, and although it has been used in a lot of ways for a lot of years, there does not appear to be a common understanding of what it means. I will attempt to give you some thoughts from the perspective of the U.S. Coast Guard and we will try to solidify some of the thoughts from this morning, looking at what's been done in various agencies.

Our hope is to achieve the following three goals: (a) a shared understanding of what risk-based decision making is and how it can be applied to the marine transportation system at the local, regional, and national levels; (b) a knowledge of where each of the agencies stands with respect to its own development of risk-based decision making; and (c) sharing the work that has already been done and coordinating our efforts to develop a systematic approach to risk-based decision making among the multitudes of stakeholders involved in the marine transportation system ports, waterways, and intermodal connections.

The Coast Guard is responsible for diverse aspects of marine transportation safety, from inspecting a vessel's machinery to marking the waterway with aids to navi-

gation. We certify the competency of ships' crews and establish routing measures. We approve vessel designs and operate vessel traffic services. As you all well know, the Coast Guard exerts enormous influence over the activity of the marine transportation system.

In managing these diverse programs, the Coast Guard is seeing ways to best allocate resources across waterways and across programs to achieve the best possible level of marine safety at the best value to the taxpayer and the least cost to the transportation industry. To do this, we have to compare the relative value of more inspections with more aids to navigation, better trained ships' crews, more efficient routing measures, improved vessel designs, and better traffic services. We see risk assessment as a valuable tool to help us do this.

The concept of risk is straightforward: it is the probability (likelihood) of an accident or incident taking place (e.g., collision, fire) combined with the magnitude of the consequences (e.g., fatalities, hazardous material spills). Risks also may encompass programmatic, political, legal, and economic aspects as well as technical and environmental ones.

Risk analysis consists of three parts: risk assessment to evaluate the problems and challenges facing the organization; risk management to identify and appraise the potential solutions; and risk communication to review the process of using risk analysis to help carry out critical management responsibilities.

The fundamental reason why we are using risk analysis in decision making is that it allows a proactive, coherent allocation of resources—budget, personnel, equipment—according to the severity of the risk involved. This happens

because risk analysis is a systematic process that compels decision makers to consider a broad range of safety challenges and potential solutions (for example, current and future trends, regulatory and nonregulatory interventions, prevention and response) when addressing an issue, so that both the efficiency of resource allocation and the overall safety performance of the system are improved.

One example of how the Coast Guard intends to use risk-based decision making is in our Vessel Traffic Service (VTS) program. We're refocusing this program on user needs, partnerships, and automated delivery of information, thus redefining the process by which we determine which ports need a VTS.

We intend to use a systematic risk assessment process that we call a ports and waterways safety assessment (PAWSA) to evaluate navigation safety conditions in ports and waterways and to determine whether additional or alternative vessel traffic risk mitigation measures are necessary. It's based on criteria provided by local waterway users and provides a structure for identifying risk drivers and then evaluating potential mitigation measures through expert input from local waterway users.

These safety assessments will consider various safety-enhancing alternatives based on their applicability to the risk conditions the port users identify and their projected cost and effectiveness. The PAWSA process is designed first to identify the risk drivers in a port or waterway that cause accidents leading to injury, loss, and environmental damage and then to identify the effectiveness of various safety interventions relative to the identified risk.

We have selected a methodology for identifying the dominant risk-inducing factors, evaluating the probab-

ity of each risk factor occurring, and determining the consequences if it does occur. Using an analytical hierarchical process model developed by the George Washington University Institute for Crisis, Disaster, and Risk Management, we will solicit expert opinion on port conditions. The model ranks port risk factors by asking a series of questions. Next, we evaluate the existing risk reduction regime and any additional interventions in terms of their cost and effectiveness.

Beginning with a list of U.S. ports that move more than one million tons of cargo each year, we will rank them based strictly on data such as vessel transits, passenger traffic, movement of hazardous material, and weather conditions. From this internal evaluation, we will develop a short list of ports that should be examined in greater detail with the analytical hierarchical process risk assessment model. Our goal is to identify areas for improvement and make sound, defensible budget decisions to implement those improvements.

We intend to strengthen the use of risk-based decision making in other areas. We plan to develop and use risk-based tools and methods for five broad areas of decision making: business plan development; regulatory development; compliance and enforcement of regulations, laws, and treaties; resource allocation; and operational decision making.

A common theme we have heard today is the idea of sharing lessons learned and sharing the kinds of things we can do to do the risk-based decision making well. So, please give some thought as you listen to the agency representatives describe what their agencies have been doing.