

VESSEL PORT INTERFACE PROGRAMS AS RISK MANAGEMENT TOOLS

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Abstract:

Larger and more technically sophisticated vessels present unique emergency response and environmental management situations, which will elevate prearrival port-vessel communications to a critical level. Large vessels will require port services that will range from trained inspectors of material and waste storage areas to port security and emergency response personnel trained to understand the layout and cargo (both human and material) of the vessel. Port reception facility technologies must also

be reviewed and enhanced to ensure maximum protection of human health and the environment.

In order to minimize the risk posed to human health and the environment by vessel/port interface issues there is an urgent and compelling requirement for a comprehensive integrated vessel/port interface program to ensure proper risk analysis, risk communication and risk management principles and practices are in place and operational. Neither the vessel owner/operator nor the port authorities has the luxury of waiting for the safety or environment accident to occur before taking measures to contain and mitigate the consequences.

Green Ports proposes a user-friendly framework, which facilitates this interface while having as a goal International Quality Certification and global harmonization of risk management issues. The ISM Code and ISO 14001 Quality Management Standard are appropriate vehicles around which to structure such a program.

Introduction

There are a number of serious concerns among vessel owners and operators regarding how to demonstrate “due diligence” in their vessel operations while also demonstrating to external stakeholders that they are responsible “Stewards of the environment” and to internal stakeholders (Board and Shareholders) that the decisions are business based and focused on meeting “applicable and relevant” requirements. The U.S. Maritime Transportation Study Report to Congress brings to focus many of the critical issues associated with vessel/port interface issues and the potential dangers to health and the environment if these issues are not adequately and comprehensively addressed. Similarly, the EU Directive on Port Reception Facilities (2000/59/EC) is directed toward the ship in interaction with the (community) port.

The Awareness and Preparedness for Emergencies at the Local Level (APELL) Program is developed by the Industry and Environment Office of the United Nations Environment Programme (NEP IE) in

response to various industrial accidents and natural occurring disasters in both developing and developed countries. It is a process for co-operative action to improve community awareness and emergency preparedness.

This paper will focus on methods for elimination of specific hazards which may be minimized or eliminated by integrated vessel/port interface programs, recognize the difficulties due to port structures and propose a framework aligned with both the US and EU goals for global harmonization of integrated risk management of vessel/port interface issues.

Background

Marine transportation is expanding driven by economical growth and an increasingly overloaded land transportation infrastructure. Therefore, the general public, the politicians, and, as a consequence, shippers and cargo owners will increasingly focus on the marine environment and maritime safety. Maritime safety and protection of the environment are highly complex topics.

APELL for Port Areas is an adaptation of the UNEP IE APELL, undertaken in conjunction with IMO. The local plans developed for port areas developed through the APELL process can be linked with state/provincial, national and international plans and agreements as necessary.

Although port areas are fixed installations, creating joint emergency plans is likely to be a complicated process, for the following reasons:

The international nature of many port activities means that many standards, conventions, and regulations may be involved.

Because of the complexity of port operations a large number of potential stakeholders may be involved.

The management structure of the port usually reflects the diversity and scale of its activities, leading to the

existence of autonomous facilities having their own management structures, e.g. petroleum, liquefied gas, and chemical terminals.

The APELL co-operative approach is in accordance with that generally adopted in combating marine accidents, in particular, gas, oil, and chemical releases. Regional and Bi-Lateral agreements on co-operation have been adopted all over the world. The most important global instrument in this field is the International Convention on Oil Pollution, Preparedness, Response, and Co-Operation (OPRC) adopted in 1990 that establishes that contracting parties will co-operate for the purpose of responding to an oil spill. The scope of the OPRC Convention is now expanded to apply to all pollution incidents involving hazardous substances other than oil.

Creating a Globally Harmonized Model

To begin to understand how such a model may be developed and implemented it is necessary to put the vessel/port interface issues into a more easily understood format. The port can be seen as a large Industrial Complex and each vessel that enters the port as a “tenant” putting the relationship into the more familiar one of host/tenant. The primary difference being that the port tenants are transient and the risk profile of the port potentially changes with the access and egress of each vessel. The logical initial step would be an understanding of the needs of each unique tenant/vessel. Just as shoreside tenants would provide to the host inventories of their hazardous materials to include types and quantities, processes performed in support of the operation, numbers of personnel to include job/task descriptions and training of those personnel, profile of emissions (air, land, water releases/discharges), recycling/beneficial reuse opportunities, waste management requirements to include waste profiles, and emergency response support requirements; each vessel should have the same integrated risk management programs in place and operational to be provided to the ports at which the vessel calls. Green Ports proposes Smart Card technology as a method of

compiling the data to provide to the responsible Port Authorities.

How the Model Works

This model requires that the vessel have a management system in place, which can be provided to and coordinated with the port authorities to ensure that the port has the ability to manage the requirements of the vessel. Such a program is in conformance with maritime requirements, including MARPOL, EU Directives, and US Recommendations, and protects the interests of the vessel/owner operator. This system further allows for scientifically valid profiling of vessel emissions and accurate assessment of the potential impact to the environment potentially establishing a scientifically sound baseline for globally harmonized regulation of vessel operations while protecting the port state environment. This model can be customized to accommodate the requirements of “Special Interest Areas.” The training piece is especially critical because as shipping continues to expand, the availability of skilled labor to perform the duties onboard is not keeping pace. It is generally recognized that “Human Error” is an important factor in many accidents and incidents and therefore, in addition to improving and enhancing the technologies for measuring, monitoring, and managing systems onboard, it is also essential that workers be trained to understand and perform the functional requirements of their positions and the potential impacts of their performance on both the conformance of vessel operations and the Safety of Life at Sea.

The management system and the information gathered during the operation of that system is provided to the port authorities. This information allows the Port Emergency Response personnel to profile the response capabilities as well as the support requirements of the vessel. Integration of these capabilities would optimize protection of human health and the environment and meet the key objective of APELL, which is to:

“Increase awareness of all people in the community to the hazards that may exist and to help the local community be better prepared for emergencies resulting from industrial accidents that threaten to extend beyond the fence line of the industrial facility.”

APELL proposes co-operation at the local level through the co-ordinating group formed by industry, government, and the community.

Port personnel can also utilize the vessel information to ensure that proper reception facility technologies and contracts are in place to manage vessel requirements for wastestreams in a manner that affords maximum protection of human health and the environment. For example, profiling of slop tanks for various tankers will allow those tanks to be appropriately emptied and the wastes properly managed so that in the event of an operational incident the tank is one less area of concern as a contributor to environmental damage. This profiling of wastestreams may also allow technologies to be identified which can be used in Port Reception Facilities while evaluation of the feasibility of creating a shipboard technology to treat the wastestream currently being landed is completed. Appropriate contractors with capability to transport, treat and dispose of the ship generated wastestreams can also be identified by providing this level of definition to the port authorities. This is supportive of the EU Directive, which firstly puts down an obligation on ports to provide adequate reception facilities based on better-defined standards and requirements. Secondly, makes specific obligations for ships to use the facilities provided, and thirdly, the EU rules offer a regime for control, compliance, and review.

The vessel provides enough information to the port in a manner that the shoreside authorities recognize and respond to, that the interface becomes an effective one.

Other Areas of Interest for the Model

The proper training of vessel contractor support personnel and port personnel to include pilots is also an important Risk Management Tool. While vessel personnel may meet “State of The Art” training requirements if contractor support personnel and port personnel do not meet that same standard then the risk may be increased by those operations rather than diminished. The ability to track and validate that contractor and port personnel are properly trained is also supported by maritime best management practices. If a new type of operation is introduced into the port, for example LNG as opposed to Bulk Carrier, it is essential that all personnel associated with the operational support of that vessel be retrained and the retraining be validated to ensure that the risks are appropriately managed. The model, which will modify the port risk profile with the access and egress of each vessel, will also ensure that the community emergency response personnel are aware of and prepared to respond to the current risk profile of the port.

The Society of International Gas Tanker Terminal Operators (SIGTTO) has taken a very pro-active approach to this matter and a great deal of their Self-Assessment Protocol for members is directed at Third Party conformance issues such as training.

References

Dr. Gillian Reynolds, LR’s principal surveyor, environmental engineering, has a focus project to look at real data in environmental matters. Dr. Reynolds revealed, “ Originally when we were thinking of our environmental approach in 1997, we went to owners and asked them if they wanted a goal-setting approach to the notation scheme. They said no. They said they needed to be told what to do with current and coming environmental legislation.” In the LR study the benchmark remains Nox emissions as defined in MARPOL Annex 6. LR is depending on hard data for vessel management related to the environment. LR recommends a blend of the desirable with the practical. The proposed Green

Ports system will provide the hard data needed for vessel management decision making and includes a regulatory database to ensure that there is understanding of what is currently applicable and relevant as well as what is coming in the future. This should take planning and programming from reactive to proactive.

The work done by Det Norske Veritas and its associates which included Massachusetts Institute of Technology among others, in the Norwegian Green Ship Programme in 1994 also strongly support the framework implemented by Green Ports and Green Ports worked closely with Det Norske Veritas to finalize the framework. Simply stated the goals of Green Ports which meet the research recommendations of the Norwegian Green Ship Program are: Identification/Integration of Human Factors Issues, Integration of Risk Management, Enhanced Business Practice (e.g. Effective Procurement), Enhanced Operational Effectiveness, Conformity/Due Diligence Documentation, Enhanced/expanded Risk Communication, Expanded/Enhanced Internal/External Stakeholder Involvement, “Beyond Compliance” ISO 14000 Certification. “Global Harmonization of Integrated Risk Management” is the end goal of Green Ports implementation.

Additional support for the Green Ports framework and goals is defined in The Council for Labour Supervision on Norwegian Ships publication Quality Assurance Guidelines for Quality Management and Quality System Elements which calls for the shipowning company to develop, issue, and maintain operational procedures coordinating different activities with respect to an effective quality assurance system, and to implement corporate quality policies and objectives the document further confirms the Green Ports starting point that effective procurement procedures and careful receiving inspection can save considerable expense. Green Ports begins by looking at regulated substance management and required support technologies both of which are high dollar procurement programs if not properly managed and coordinated.

The International Chamber of Shipping in their publication "Shipping and the Environment A Code of Practice" lists as the purpose of the document, "provide a framework for the development and continuing review of environmental management standards and practices, to be incorporated into the corporate culture and management procedures of shipping companies and identify specific subjects of environmental concern upon which companies should focus." It further defines these things as the elements of highlighting and documenting environmental performance, principles of environmental management including having in place management practices to effect improvement, information on applicable and relevant regulations and prime sources of pollution and mention of forthcoming regulation, and recommended management practices to address the sources of pollution. All of these elements have been incorporated into Green Ports.

Perhaps most importantly, the EU regime has the potential to become a forceful tool for ensuring that adequate reception facilities are established and made use of. The way the Directive builds upon obligations already accepted by member states in MARPOL, while at the same time taking further by addressing in detail the distribution of legal, financial and practical responsibilities between the different players involved also serves as an illustrative example of how a harmonized and mandatory implementation of internationally agreed (MARPOL) rules has become a fundamental pillar of the EU's maritime policy. Green Ports welcomes and strongly supports the EU's forward looking policies in this matter and recognizes the benefits to shipowners, port communities and the global environment from such practices.

Biography

Ms. Freese has been actively involved in the Safety and Environmental profession since October of 1985. During that time Ms. Freese served as the Chief of Naval Operations Safety and Environmental

Department Section Head for Environmental Compliance Staff, as well as, the Chief of Naval Operations Resource Conservation and Recovery Act Program Manager worldwide

Ms. Freese also served as the Safety/Environmental Director, Naval District Washington, overseeing the construction associated with Base Relocation and Closure to the Historic Washington Navy Yard (established 1799). She also developed with full Command Support a community relations program called "Walls to Bridges" which evolved into "Bridges to Friendship" providing job training and community revitalization as part of the Navy Yard adaptive reuse. Vice-President Gore mentioned this program as a national model during a 1998 speech at the White House.

In June of 1998, Ms. Freese left the Federal Government to become the Director, Environmental Programming, Marine Operations at Royal Caribbean International. At Royal Caribbean she directed implementation of operational policies and procedures for all vessels in the RCI Fleet and has sailed with every ship in the fleet. She also provided oversight for the initial round of audits from which the reports were forwarded to the U.S. Government.

In October of 1999 Ms. Freese resigned her position at Royal Caribbean Cruise Line and formed Green Ports Enterprises, Inc.(US) and Green Ports International (UK), companies with the goal of facilitating the many issues associated with successful vessel port interface and sustainable development for both shipboard and shoreside communities.