ABSTRACT

Manufacturers, transporters and regulators of hazardous materials, as well as other stakeholders, are recognizing the value of risk-based decision making to improve safety performance. Attention is being focused on the entire life cycle, including the production, storage, consumption and disposal of hazardous raw materials, intermediates, finished products and wastes.

Two important components of risk-based decision making in this context are the ability to properly assess the risks associated within an operation and to effectively manage incidents should they occur. Pro-active risk management programs approach these considerations from both an advanced planning and real-time perspective.

To successfully address these issues, a considerable amount of spatial information is needed to characterize facility operations, facility proximity to human health and environmental receptors, and the location of qualified response resources. These information requirements are particularly challenging in the transportation components of the life cycle, since multiple modes of shipment may be used, and each mode offers thousands of miles of routes comprised of varying characteristics within the transport corridor. Fortunately, advanced information tools have been developed to assist decision makers with risk assessments and emergency management that apply not only to the transportation sector, but to other parts of the life cycle as well.

This presentation will focus on the need for these risk management tools, how they are being developed, what is available off-the-shelf today, and the value-added they provide towards protecting human health and the environment. Case studies will be used to illustrate common uses of these tools in risk assessment and emergency management applications covering both planning and real-time situations.