Hazard Management versus Safety Risk Management Guide

Overview

The Federal Transit Administration (FTA) has received questions from public transportation agencies and State Safety Oversight (SSO) Agencies regarding how the hazard management process, previously required in FTA's original SSO regulation (49 C.F.R. Part 659), differs from the Safety Risk Management (SRM) process required in FTA's Public Transportation Agency Safety Plan (PTASP) regulation at 49 C.F.R. Part 673 (Part 673). This guide explains these differences and highlights how key hazard management elements support implementation of the new SRM process.[1]

What is Hazard Management?

Since the mid-1980s, transit agencies have used "hazard management" as a term to describe the process through which they identify and resolve hazards during transit operations and in capital projects.

Hazard management focuses on reviewing potential sources of hazards in the transit system; evaluating and mitigating hazards; and reporting on hazard management activity to agency leadership and the State Safety Oversight Agency, if applicable. Hazard management typically uses hazard analysis techniques, such as those specified in the Department of Defense's Military Standard 882, System Safety, which many transit agencies voluntarily adopted.

Hazard management often assumes that systems—as designed—are sufficient to prevent hazards, and, therefore, focuses on addressing single deficiencies or failures in system performance that result in accidents or incidents. Hazard management typically uses corrective actions to prevent such failures in the future.

Key Characteristic of the Hazard Management Process

The hazard management process typically identifies and manages hazards – resulting from single failures or deviations in a fixed technical system – individually, without long-term monitoring for effectiveness or prioritization against other hazards.

[1] *The guidance in this document is not legally binding in its own right and will not be relied upon by the Federal Transit Administration as a separate basis for affirmative enforcement action or other administrative penalty. Compliance with the guidance in this document (as distinct from existing statutes and regulations) is voluntary only, and noncompliance will not affect rights and obligations under existing statutes and regulations.*

What is Safety Risk Management?

Under Part 673, SRM is the core process of each transit agency's Safety Management System (SMS). SRM determines and classifies systemwide safety risk to develop appropriate risk mitigation strategies. SRM ensures:

- Hazards and other safety issues are identified and documented, and the associated safety risk is prioritized, mitigated, monitored, and controlled.
- Safety risk is determined, assessed, and classified, and unacceptable safety risk is mitigated.
- The effectiveness of risk mitigation strategies is monitored and assessed, and the Accountable Executive ensures the overall performance of the SMS and SRM.
- There is continuous progress toward improving safety.

SRM also ensures that when safety risk is accepted, as a prerogative of the Accountable Executive, the decision is coordinated with the affected personnel and stakeholders, and then documented so that, in the future, everyone will understand the decision and why it was made.

SRM assumes systems are changing and, therefore, focuses on the routine, ongoing capture and analysis of safety information to assess the safety risk of potential consequences of hazards—both foreseen and unforeseen during system planning. Based on an assessment of safety risk, SRM supports decision-making regarding priorities in allocating safety resources.

SRM applies to all elements of the public transportation system, including employees and contractors, infrastructure, vehicles and equipment, revenue and non-revenue service activities, and may also include others who come into contact with the system, such as first responders or other local agency employees. Within the SMS, the SRM process also feeds into the transit agency's Safety Assurance process by evaluating changes that may impact safety performance, such as changes to operations and maintenance procedures, existing system configuration or service, organization structure or resources, and new capital projects. SRM also helps the agency evaluate the effectiveness of its safety risk mitigations over time.

Key Characteristic of the SRM Process

The SRM process focuses on the systemic management of safety risk resulting from technical systems that change over time. SRM continuously monitors the effectiveness of mitigations and decision-making regarding priorities in allocating safety resources.

Key Differences

Hazard management focuses on action to address a specific failure or occurrence, where SRM focuses on routine, on-going capture and analysis of safety information agency-wide that inform decisions about resource allocation to manage safety risk. Key differences include:

Key Differences Between Hazard Management and Safety Risk Management		
	Hazard Management	**Safety Risk Management**
Main Objective	Prevent technical system failures and damaging outcomes resulting from those failures.	Support decision-making priorities for allocating resources to address the potential consequences of hazards.
Applicability	Hazards that arise during transit operations and maintenance, and during major projects, system modifications, and procurement.	All elements of the transit system.
Major Assumption	Technical systems implemented and used as designed are sufficient to prevent technical hazards.	Technical systems implemented and used as designed will fail with use and system and environmental changes.
Ownership	The safety department typically owns and implements all hazard mitigations.	Each department typically owns and implements their own hazard mitigations. The Accountable Executive must ensure the overall effectiveness of the SMS and SRM process.
Lifecycle	The agency identifies, evaluates, and mitigates the hazard.	The agency identifies, evaluates, and mitigates potential consequences of the hazard and monitors mitigation performance throughout the hazard's lifecycle.