

National Academies of Sciences, Engineering, & Medicine

Project Title: Performance-Based Safety Regulation

PIN: TRB-SASP-15-05

Major Unit: Division of Behavioral and Social Sciences and Education
Transportation Research Board

Study Duration: Awarded September 2015 ending May 2017

Study Webpage: <https://www8.nationalacademies.org/cp/projectview.aspx?key=49767>

Subject/Focus Area: Transportation and Infrastructure

Project Scope

Revised Statement of Task

Many countries, including the United States, use forms of performance-based regulation to promote safety and reduce risk in high-hazard industries. The term “performance-based” is often used to refer to (a) standards that mandate outcomes and give firms flexibility in how to meet them, or (b) requirements for firms to use management systems consisting of internal plans and practices for promoting safety and reducing risk. Performance-based regulation is usually contrasted with “prescriptive” regulation – sometimes called specification, design, or technology standards – that requires firms to adopt specific means to promote safety and reduce risks. This study will compare the advantages and disadvantages of prescriptive- and performance-based forms of safety regulation and identify possible opportunities for, and constraints on, making greater use of the latter. The study will be informed by experiences of performance-based safety regulation in the U.S. and abroad and will make recommendations about the application of this regulatory approach in high-hazard industries, such as off-shore oil and gas, pipelines, and other modes of transportation.

Original Statement of Task

Performance-based regulation to manage risk in high-hazard industries has been adopted by many nations and some industries in the United States because this approach promises to overcome the inherent limitations of enforcing compliance through prescriptive regulation. Prescriptive regulations are typically set at the floor rather than the ceiling, thereby setting minimum standards of performance, but missing the opportunity to encourage companies to exceed minimum requirements and reduce the risk of injury and environmental damage. This study will examine the advantages and disadvantages of performance-based safety regulation and identify constraints on U.S. regulators from pursuing this approach. It will also identify the socio-political conditions that have been necessary to allow this shift in emphasis to occur in other nations and industries in order to recommend whether and how a performance-based approach could apply to transportation and other industries in the United States.

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