

Performance Standards and Rail Safety Regulation

ASSOCIATION OF AMERICAN RAILROADS

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WHAT SHOULD BE DONE?

Adopt performance standards in place of rigid command-and-control rules to regulate safety in the railroad industry.

WHY?

Under a safety regime that incorporated performance standards, **railroads would remain fully accountable for operating safely**, but they would have the opportunity to achieve desired safety outcomes as efficiently as possible. Performance standards focus on the outcome, relying on the superior knowledge railroads and their employees have regarding rail operations while giving railroads discretion to experiment with new technologies and processes. The result would be **improved safety performance** at a lower cost to the Federal Railroad Administration, rail customers, and railroads.

Overview of Performance Standards

- There are two general approaches to workplace safety regulation: command-and-control “design-based standards” and “performance standards.”
 - ✓ **Design-based standards**, the method most often used by the Federal Railroad Administration (FRA), **specify the precise characteristics** of workplace facilities, equipment, and processes a firm must use in the manufacture and delivery of its product or service. For example, FRA regulations that specify time intervals between required locomotive inspections are design-based standards.
 - ✓ **Performance-based standards**, on the other hand, define the desired result rather than mandating the precise characteristics that a workplace must exhibit. The point of a performance-based goal is to focus attention and effort on the outcome, not on the method by which that outcome is achieved.

Performance Standards Are Superior to Design-Based Standards

Railroads have powerful incentives to improve safety and reduce the costs of injuries and accidents. They and their employees are in the best position to know how to do this.

- Performance standards are a **reform, not an abandonment, of safety regulation**. The FRA would oversee the goal-setting process, ensure that the measures and data used are accurate, and impose sanctions if railroads failed to meet their safety targets.
- There is little evidence that rigid design-based standards, which are often decades old, actually improve safety. A performance-based approach would allow the FRA and railroads to achieve greater safety at lower cost. Under performance standards, railroads would still be fully accountable for safe operations. **Rail employees, rail customers, and the public at large would still be fully protected.**

- **Design-based standards impede innovation by locking in existing designs, technology, and ways of thinking.** That’s a big problem in a world when technologies are constantly changing and improving. Instead, policymakers should create a regulatory framework that encourages innovation and the development of new technologies that would make railroads safer. The current regulatory structure is backward looking, not forward looking, because it does not take into account advances in locomotive and freight car components, signal systems, track inspection procedures, and much more.
- Reflectivity is an example of a rail-related safety issue that has benefited from a performance standards approach. Railroads today must equip their freight cars and locomotives with reflective sheeting to make them easier to see at night by motorists at highway-rail crossings. FRA regulations mandate that this sheeting be replaced no later than ten years after installation, regardless of condition. However, studies have shown that the ability of the sheeting to confer safety benefits — that is, to be reflective — depends much less on the date of installation than on other factors, such as how the material has been maintained. Railroads were forced to replace perfectly functional reflective sheeting based on an arbitrary regulatory lifespan.
- Fortunately, the FRA has granted railroads a waiver from the existing regulation. Under the waiver, railroads can use a comparator card evaluation process to determine whether reflectorized material needs to be replaced. Put another way, railroads now can use an objective technique to measure reflectivity and only replace sheeting that does not meet the performance-based requirement. This allows railroads to avoid costly replacements that do nothing to improve safety. This performance-based approach to reflectivity is similar to what the Federal Highway Administration has long been using to determine if the reflectivity of traffic signs has degraded enough that they need to be replaced.
- Train air brake inspections are another area that would benefit from a performance standards approach. Current FRA regulations require manual brake inspections at intervals determined by mileage. However, technology exists that can better measure actual braking performance. One example: wheel temperature detectors systems that use infrared sensors to measure the surface temperature of wheels passing the detector. Using well-developed algorithms, these temperature measurements determine whether brakes on a railcar are working properly: “cold” wheels could indicate ineffective or inoperative brakes, while inordinately “hot” wheels could indicate brakes that are sticking. The detectors measure performance in a way that is objective, quantifiable, and independent of conditions that can impair a visual inspection (such as weather, lighting, fatigue, inexperience, or error).
- Performance standards have been encouraged elsewhere. Just a few examples:
 - ✓ The 1990 Amendments to the Clean Air Act directed electric utilities to limit their emissions of sulfur dioxide and nitrogen oxide, but did not tell the utilities how to meet those standards.
 - ✓ The National Highway Traffic Safety Administration (NHTSA) sets and enforces safety performance standards for motor vehicles and equipment, and the Pipeline and Hazardous Materials Safety Administration (PHMSA) has developed and issued regulations that address risk analysis and integrity management programs for pipeline operators that largely utilize a performance standard process.

- ✓ The Nuclear Regulatory Commission (NRC), which develops regulations governing nuclear reactor and nuclear material safety, has been using performance-based regulation for years. The NRC says its performance-based approach improves objectivity in decision-making by reducing individual bias; improves transparency by more clearly defining goals and objectives; increases confidence in the safety of nuclear facilities by defining requirements for which compliance can be demonstrated; and enhances the effectiveness, efficiency, realism, and timeliness of regulations. The NRC says that the effectiveness of the its regulatory efforts, including the use of performance standards, “is demonstrated by evidence (from operating experience) that the desired results and outcomes have been — and continue to be — realized.”

Performance Standards Should Be Part of Broader FRA Regulatory Reform

The FRA should become more forward-looking in how it proposes and promulgates new rules. This effort should include incorporating performance objectives in regulations and guidance documents. In addition, the FRA should:

- Carefully identify and describe beforehand the specific safety concern that a particular new rule is meant to address, and ensure that the new rule actually would address the safety concern efficiently and effectively. Meaningful dialogue with railroads and other interested parties is essential in this effort.
- Use current data and sound science to establish the need for a new rule and to validate that benefits of a new rule exceed costs.
- Give the public meaningful opportunity to review and comment on new rules; provide full transparency, avoiding “black box” approaches and methodologies.
- When proposing rules, also propose metrics by which the rules’ effectiveness in achieving their stated objective can be judged.
- Take care not to “lock in” existing technologies and processes so that new innovations, including new technologies, that could improve safety and improve efficiency are not stifled.
- Regularly review final rules to determine if they are still meeting their stated objectives.
- Issue emergency orders only after finding a high risk of imminent harm. Emergency orders should be narrowly tailored and expire automatically after the unusual risk has passed or has been adequately addressed.