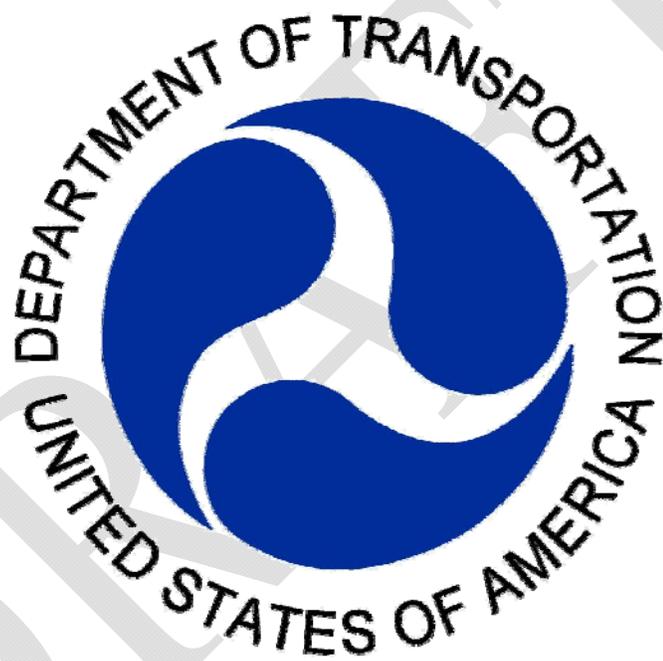


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Risk Reduction Program Guide



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This document provides information on the Federal Railroad Administration’s (FRA) Risk Reduction Program (RRP) and the process to participate in a pilot program. Background information on RRP, definitions of RRP terminology, and an overview of RRP are described here. The RRP process, including its application and implementation, is detailed here as well as policy and guidance related to RRP activities. Together, this information presents the full intentions of RRP and its impact on improving safety.

I. Introduction

Current regulations, safety rules, regulatory compliance, rules compliance, and employee disciplinary policies are considered important and effective minimum standards of the overall safety system in the U.S. rail industry; however, because of the punitive, disciplinary, and often blame-oriented nature inherent within such a system, any individual component of traditional rule-based systems has the potential to foster a widespread fear of punishment or reprisal and may actually suppress the honest and accurate reporting of important precursor events to an accident. When this occurs, the accident risk increases because important safety critical information, that could have prevented future accidents from occurring, is being withheld. To the extent this occurs on a widespread basis, the structural integrity of the regulatory and compliance-oriented framework may be compromised and serve as an inherent barrier to further improvements in safety. Risk-based approaches present an opportunity to protect the minimum standards created by regulations, while at the same time creating an environment that values and encourages the adoption of supplemental RRP. By utilizing both the traditional regulatory standards with risk-based approaches, we have the opportunity to change the current railroad culture from one of distrust to one of mutual cooperation—at least regarding true safety improvements.

Since 2005, the railroad industry has already hired more than 40,000 new employees, with another 40,000 expected to be hired in the next 3 years. This massive influx of new employees brings an opportunity for fresh ideas to improve railroad safety. In addition, safety statistics indicate that current safety systems have more or less reached the limits of their effectiveness. For these reasons, FRA believes that an important opportunity now exists to implement industrywide changes that could significantly reduce accidents in the railroad industry.

What is the Risk Reduction Program?

RRP is an FRA-led industrywide initiative to reduce accidents and injuries, and build strong safety cultures by developing innovative methods, processes, and technologies to identify and correct individual and systemic contributing factors using “upstream,” predictive data.

Using voluntary, nonregulatory approaches, RRP will incorporate precursor data management and confidential reporting systems to better identify and proactively correct

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individual and systemic factors that contribute to accidents. It is proactive, rather than reactive, because it encourages the prevention of accidents. The essential ingredients of the proposed approach include developing knowledge of the precursors to actual accidents, confidential reporting, effective problem analysis, and corrective actions. The adoption of new, nonregulatory approaches creates the opportunity for accelerated improvement, but does not supersede current regulatory approaches. This combination of traditional regulatory activities and enhanced nonregulatory approaches will allow FRA, railroads, labor groups, and other stakeholder groups to make more rapid progress in achieving their safety missions.

Regulations necessarily tend to involve specifications of engineering-based and, in some cases, procedure-based risk management measures; however, the effectiveness of such systems ultimately depends on the organizational systems that support safety. Organizational systems such as those used for performance management, staff development, etc. and the culture that makes such systems effective, are at the core of safety excellence. This aspect of safety, which is where safety directly interacts with fundamental organizational management, cannot be solely dictated by regulation. Rather, it must be encouraged through establishing an environment favorable to safety-supporting cultures.

What Would the Risk Reduction Program Entail?

As a significant component of the nonregulatory approach, voluntary risk-reduction projects will target operations, equipment, or systems that pose a risk to operational and personnel safety and will establish pilot projects that effectively prevent an accident or incident. FRA will assist those who wish to participate in establishing pilot projects that will be used to identify and address risk including measurable goals and reporting processes. FRA will also work with the industry to identify current programs that are successfully reducing risk. FRA will compile the information and disseminate the lessons learned nationwide. Successful pilot projects may develop into nationwide programs.

FRA envisions a wide variety of projects that could fit under the RRP umbrella. Some examples include the close call reporting systems, peer observation programs, management development systems, and the Collision Hazard Analysis currently in place on some commuter railroads. In addition, use of the Track Quality Index for predictive maintenance or capital investment and use of wayside equipment monitors and sensors could potentially qualify as an RRP pilot project. In fact, any innovative use of predictive data could be seen as a potential pilot project.

Creating data collection and risk-based safety systems that make precursor data more readily available affords a better understanding of the systemic contributors to accidents and why those accidents occur. FRA recognizes that there may be a need to incorporate waivers or formal memoranda of understanding (MOUs).

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Successful pilots will incorporate basic criteria that include the following:

1. Commitment from all stakeholders
2. Voluntary, confidential, and non-punitive participation
3. Systematic and objective data gathering, analysis, and reporting
4. Problem solving and corrective action
5. Mechanisms that enable long-term sustainability
6. Willingness to share the innovation and results within the industry (excluding any information the company considers confidential)

Where Do We Go From Here?

Initially, RRP will be composed of a set of pilot projects targeting specific risk categories in limited studies. FRA will work with railroads, labor, and other interested organizations that volunteer to conduct pilot projects. FRA will coordinate project development, oversee project implementation, and evaluate the project to determine the effectiveness of countermeasures and corrective actions taken. FRA will then disseminate information about successful pilot projects to encourage a more wide-scale adoption of effective risk-reduction solutions. Finally, FRA will support the adoption of some pilot projects on a nationwide scale.

II. Definitions

Below is a list of terms frequently used in this document or in describing RRP.

Applicant/Sponsor: An organization or interested group that proposes and executes an RRP pilot project.

Application: A formal proposal submitted to FRA describing a project. An application meets all the basic criteria for participation and required elements outlined in Step 1 of the RRP process (below).

Executive Steering Committee (ESC): A committee of senior FRA leadership charged with ensuring that program goals support the objective of reducing risk and improving overall safety.

Expression of Interest (EOI): A letter or other preliminary proposal submitted to FRA outlining a potential project's goals and objectives as outlined in Step 1 of the RRP process.

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Key Personnel: Management and labor representatives of the railroad, related industry company, or interested group responsible for implementing and managing the pilot project.

Pilot Project: A project designed to develop and apply unique or innovative approaches employing leading risk indicators and other precursor data not previously or widely used to reduce risk and improve safety.

FRA Project Team: A committee of RRP staff assigned to assist the pilot project applicant/sponsor and perform functions necessary for the establishment and sustainment of a project. The core members of the team may include a project manager, project analyst, field representative, and data analysis personnel. Other members may include some or all of the following individuals:

- Office of Safety technical experts
- Regional management, supervisory specialists, or inspectors
- Operations research analysts
- FRA contracting officer
- Attorney from FRA Office of Chief Counsel
- FRA Safety Board member(s)
- Data security specialist
- Other subject matter experts

Risk Assessment: The process of determining, either quantitatively or qualitatively, the measure of risk associated with use of the product or system under all intended operating conditions.

Risk Reduction Program: An FRA-led industrywide initiative to reduce accidents and injuries, and build strong safety cultures by developing innovative methods, processes, and technologies to identify and correct individual and systemic contributing safety risk factors using upstream, predictive data.

Subject Matter Experts: Personnel providing technical or operational guidance on a short-term basis.

III. Overview

The RRP mission is to develop a national framework that promotes the adoption of innovative risk-reduction methods to improve railroad safety and enhance safety culture. RRP is based on five main objectives: (1) develop voluntary and non-punitive risk-reduction strategies; (2) create an environment for collaboration and learning on risk

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reduction for railroad industry stakeholders (e.g., labor, management, shippers, and the public) and FRA; (3) establish evaluation methods and measurable performance metrics to assess utilization, impact, effectiveness, and transferability; (4) develop processes or mechanisms that establish a learning and collaborative culture; and (5) identify innovations and encourage their use across the industry.

Together, the mission and objectives of RRP are designed to achieve improved safety by meeting the following short-term, intermediate, and long-term goals.

Short-Term Goals (< 2 years)

- Develop national framework for collaborative safety programs
- Develop systematic methods for identifying and evaluating safety risk precursor data
- Implement two pilot risk-reduction projects

Intermediate Goals (2–5 years)

- Track risk-reduction impacts as defined in each pilot project’s implementation plan
- Target reduction in individual pilot project-related accidents/injuries by 50 percent in 5 years
- Adopt one pilot project for industrywide implementation

Long-Term Goals (> 5 years)

- Reduce pilot project-related accidents/injuries industrywide by 50 percent in 10 years.

Program Parameters

The RRP is intended to promote the industry’s adoption of RRP and support the development of innovative tools for measuring and managing risk and improving safety. The RRP will not change FRA’s existing safety inspection, regulatory compliance, and enforcement programs or processes. Pilot project data, including evaluations and project reviews, will not be shared with compliance personnel. This information may not be used to justify increased inspection activities, support civil penalty assessments, or to support other enforcement initiatives such as focused inspections. In addition, individual pilot project results may be shielded from the Freedom of Information Act and discovery to limit legal liability to the project’s sponsor and FRA.

Eligibility

Parties eligible to apply and participate in the RRP include railroad carriers and unions; industry organizations (e.g., Association of American Railroads/American Public Transportation Association/American Short Line and Regional Railroad Association, shippers, etc.); suppliers and manufacturers (rail, equipment, etc.); and other interested parties.

Pilot projects could include, but are not limited to, close call reporting systems; peer-to-peer observation programs, feedback, and corrective action processes (e.g. behavior-based safety); root-cause accident investigation approaches; track inspection programs or systems; passenger station safety assessments; and fatigue risk management systems. Pilot projects cannot come in direct conflict with existing FRA enforcement efforts, waivers, block signal applications, or extraordinary remedies in effect.

Basic Criteria for Participation

In general, each pilot project must demonstrate:

- Commitment and engagement from all key stakeholders: Identifying and including all relevant stakeholders in the design and implementation as early as possible (local labor officials, impacted employees, local and senior management, suppliers, etc.). Voluntary, confidential, and non-punitive participation.
- Systematic and objective data gathering, analysis, and reporting: Collecting risk-related precursor data, involving subject matter experts, and using well-established methodologies for analyzing risk (y-tree analysis, contributing cause analysis, hazard or job analysis, etc.).
- Problem solving and corrective action: Using a visible, systematic process for prioritizing and implementing corrective actions and measuring their impact; including relevant stakeholders in the development of corrective actions.
- Creating long-term sustaining mechanisms: Developing policy and procedural changes to support identified best practices; providing adequate resources to sustain and continuously improve the pilot project's methods.
- Willingness to share the risk-reduction innovations and results within the industry, excluding any information the company considers confidential or security sensitive information.

IV. Risk-Reduction Pilot Process

The following steps comprise the RRP process. Each is described in detail below.

Step 1: EOI and Application

Step 2: Pilot Project Application Review

Step 3: Pilot Project Implementation (four phases)

Step 4: Industrywide Adoption of Risk-Reduction Innovations

Step 1: Expression of Interest and Application

An applicant/sponsor interested in participating in RRP is first encouraged to contact FRA informally to discuss potential projects. This communication may come in the form of e-mails, telephone calls, or conversations at meetings. In some cases, FRA staff may initiate contact with industry representatives who are known to have preexisting risk-based safety programs already in place. Once the interested company or sponsor has settled on a specific potential pilot project, they will send an EOI letter to FRA's RRP staff.

Once an EOI is received, RRP staff will work with the sponsor to develop a pilot project application. The pilot project must demonstrate the RRP's basic criteria for participation (described above). Applications must include the following required elements:

- A description of the proposed project
- A discussion of the project's objectives and anticipated results
- A brief analysis of the project's potential for industrywide application
- An implementation plan and schedule
- An action plan outlining the project's scope, location(s), problem-solving methods, and non-punitive corrective actions
- Logic models with a qualitative and quantitative baseline and intermediate and long-term measures
- A systematic and objective precursor and safety outcome data analysis
- A general finance and logistical outlay (include FRA grant or funding request, if needed)
- Regulatory relief or a waiver request (if needed)
- A list of the pilot project's key personnel identifying their position and title
- Contact information, including mailing address, telephone and fax numbers, and e-mail addresses for key personnel associated with the project

Step 2: Pilot Project Application Review

Complete applications containing the required elements shall be submitted by the project sponsor to FRA's Associate Administrator for Safety. The Associate Administrator for Safety will forward the application to the FRA project team. The team will coordinate with other offices within FRA and assign staff to evaluate the merits of the application. The team will obtain technical input from subject matter experts, as needed, to determine whether the project's proposed measures are appropriate to accurately characterize the risks under consideration.

The project team will forward a recommendation on the application's acceptance or rejection to the ESC. The ESC will forward a recommendation to the Administrator for review and approval. The Administrator will notify the applicant/sponsor of the decision via a letter. The letter will officially accept the proposed pilot project or provide a clear description of the perceived shortfalls that preclude acceptance into the RRP.

Step 3: Pilot Project Implementation Development and Evaluation Metrics

The RRP acceptance letter signifies the beginning of the implementation development period, including processing any funding, regulatory relief, or waiver requests if needed. The project team will facilitate the sponsor's efforts to obtain any needed waivers or grants, or address other implementation issues and assist in developing any MOUs, if required.

At this point, the project team's primary role is to assist in the pilot project's development, implementation, and establishment of evaluation metrics and, if appropriate, data-sharing processes. A secondary, but no less important, role is to develop mutual trust and understanding with all stakeholders involved in the pilot project. Together, they will further define the project's parameters and specific objectives, including goals, periodic measures, and data-sharing requirements, if appropriate, while ensuring that all stakeholders' needs are addressed.

Because RRP pilot projects have the possibility of becoming models for wider industry use, it is expected that three types of evaluation will accompany each pilot. All three evaluation processes are geared towards helping the project be as effective as possible, as quickly as possible. The perspective of these types of evaluation is to foster a learning environment while improving the project. The three types include:

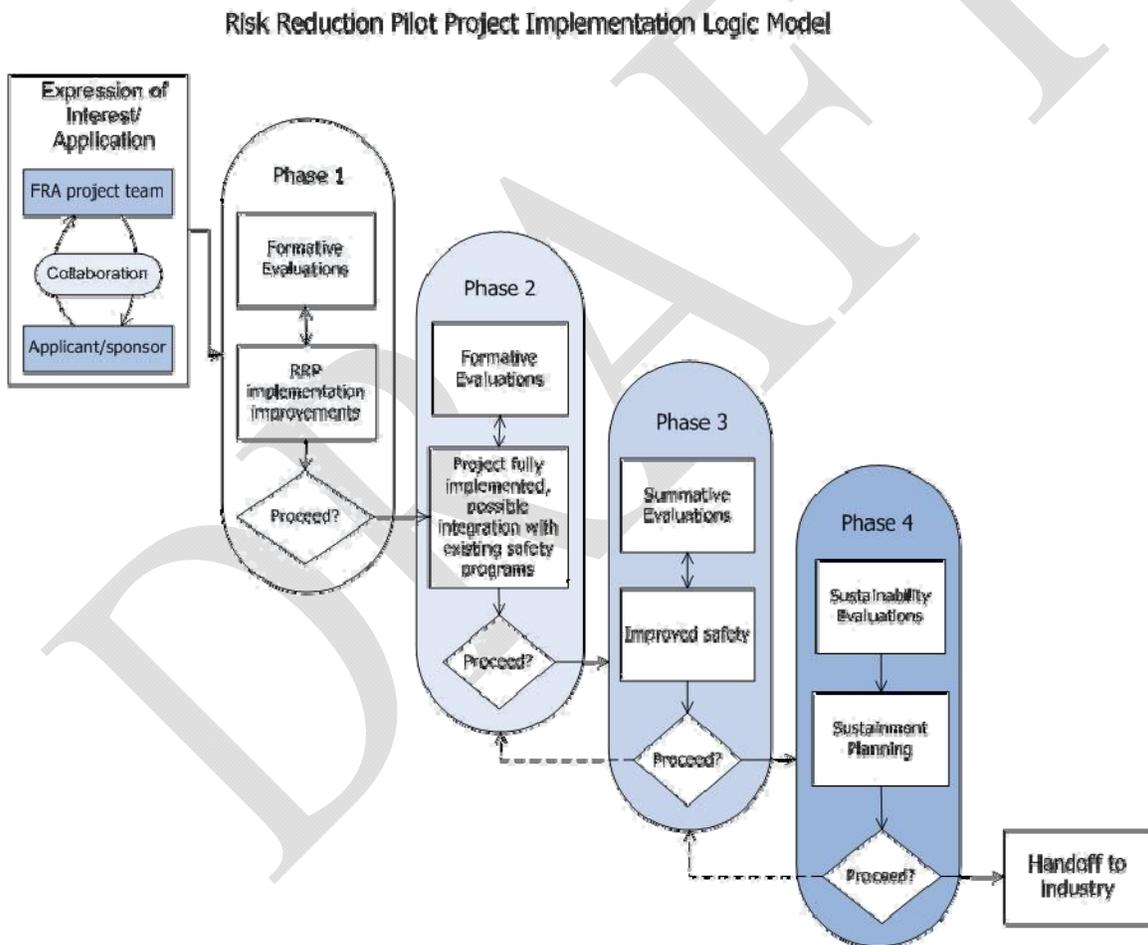
1. Formative evaluations to assist the sponsor in identifying what project improvements may help it be implemented more effectively.
2. Summative evaluations to assist the sponsor in assessing the consequences or impacts of the project's implementation and to make further adjustments.

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3. Sustainability evaluations to assist the sponsor in identifying the conditions or best practices required to maintain the pilot project. Focusing on sustainment and continuous improvement will counter undesirable “flavor-of-the-month” perceptions.

In order to assure knowledge transfer between individual pilot projects, FRA staff will participate in the technical team that conducts the evaluations.

The successful completion of applicable funding and regulatory relief requests and the establishment of the evaluation metrics will result in the pilot project’s implementation in the field. A pilot project’s implementation will be divided into four phases to assist in process evaluations and identifying improvements (see Implementation Logic Model below)



Step 3, Phase 1: Implementation Development Period

The primary purpose of the implementation development period is to determine whether the project was implemented as planned and to assist in identifying process successes and

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areas for improvement. This phase will be used to identify any issues with the field implementation process, data measurement/collection, or data-sharing mechanism and to make improvements where necessary. The project team will conduct reviews of the project's implementation, measurement data, and records to assist the sponsor in this effort. Discrepancies will be documented as opportunities for the sponsor to consider modifying the implementation plan and possibly improve the procedures. Improvements may consist of refining operating environment processes, adding resources, enhancing management support, increasing accountability, encouraging increased key stakeholder involvement, etc.

The project team will facilitate a formative evaluation in this step. The project moves to Phase 2 when the project is being implemented effectively.

Step 3, Phase 2: Full Implementation

Upon the successful completion of the implementation development period, the project is fully implemented in the field; the pilot project is up and running. There may be potential in Phase 2 to have the pilot project and its outputs integrated with other safety programs in order to prevent redundancy and unnecessary cost.

The project team will perform additional formative evaluations with the sponsor to ensure the project's implementation continues to be positive and to identify improvements. Periodic project reviews will be conducted and data collection and analysis processes may be adjusted throughout the project. The pilot project proceeds to Phase 3 when this objective is satisfied.

Step 3, Phase 3: Impact Measurement

The objective of Phase 3 is to measure the impact of the pilot project on the safety levels that were laid out in the logic model at the beginning of the project. The project team will be engaged in evaluating the pilot project's direct and measurable impact on safety levels.

Step 3, Phase 4: Sustainability Demonstration

The objective of this phase is to avoid having successful pilots inadvertently turn into "flavor-of-the-month" initiatives. For example, if the project was piloted at a single facility, one method for ensuring continued benefit from the pilot program would be to include a broader integration of the program into safety programs across an entire organization. This activity will also form the basis for making the successful initiative exportable to a wider community as described in Step 4.

Step 4: Industrywide Adoption of Risk-Reduction Innovations

The objective of Step 4 is for FRA to share lessons learned and encourage the adoption of risk-reduction innovations throughout the industry.

Sharing safety oriented information industrywide is imperative to lower the overall accident and incident rates on similar systems or operations nationwide. The RRP project team will submit an annual report outlining individual pilot project assessments and recommend possible risk-reduction projects for industrywide adoption. The report will also include recommendations for continuation or cancellation of each project and recommendations to modify or improve future projects of a similar type or process. The report will summarize potential industrywide impacts and the RRP's overall impact on risk-reduction efforts and safety improvements.

The annual report will be shared at public meetings such as industry safety summits, trade shows and magazines, discipline-specific conferences, and internally with the U.S. Department of Transportation/FRA via the Public Affairs Office. This will assist in promoting the industry's acceptance and support of implementing innovative risk-based safety improvement systems industrywide.

It is foreseeable that some pilot projects may result in few or no risk-reduction or safety improvements. These pilot projects are not to be viewed as failures since the project's evaluations provide valuable data identifying why the issues occurred and enable future pilot projects to avoid those pitfalls. Negative outcomes provide vital information that allows FRA and the industry to ensure that failing systems or processes and unsafe practices or equipment are not continued or used.

Rescinding the Risk Reduction Program Acceptance Letter

The FRA retains the option of rescinding the RRP acceptance letter under one or more of the following conditions:

- The project's sponsor is not conducting the project in accordance with the MOU or implementation plan.
- FRA funding is not being utilized or accounted for as outlined in the MOU or implementation plan.
- FRA finds knowing and willful abuse, or significant noncompliance, of approved waivers associated with the pilot project.
- Multiple noncomplying conditions are observed by FRA, directly related to the pilot project, with no corrective actions taken.

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The FRA will notify the sponsor's key personnel in writing. The RRP acceptance letter will only be rescinded after all reasonable means to implement corrective measures have been exhausted.

V. Risk Reduction Program Policy and Guidance

The following are general policies and guidance concerning specific processes or practices when FRA personnel are engaged in a RRP pilot project.

Routine Safety Inspections

1. Regulatory standards must be maintained, and the requirements of any waivers or special permits granted as part of the RRP must be adhered to at all times.
2. FRA railroad safety inspectors will continue to conduct routine safety inspections and duties per FRA's National Inspection Plan and as directed by their region or Headquarters without regard to the RRP pilot project.
3. Any regulatory relief or waivers granted as part of the project must be made available to the inspector upon request.
4. Regulatory noncomplying conditions found impacting a sponsor's pilot project are to be handled per standard procedures and regional or Headquarters guidance. Notification should be provided to the sponsor's key personnel and the RRP project managers as soon as practicable so that noncomplying items may be addressed.
5. As always, FRA may initiate civil penalty procedures if regulatory, noncomplying conditions are found.
6. The RRP should not be confused with the Railroad System Oversight Manager (RSOM) or any other regulatory compliance and enforcement program. While it is important to keep RSOM representatives informed of the pilot project and serving as a resource if necessary, they are not responsible for the RRP. This is an important point since the RRP is voluntary and all policy and guidance requests must be directed to the project managers so they may ensure the request is handled in a timely manner.

Periodic Reviews

1. The project team will conduct pilot project reviews at times agreed to by the sponsor's key personnel during the project's initial evaluation.
2. The reviews will assist in identifying process improvements; validating project benefits, measurements, and goals; and verifying data reporting and collection procedures. The reviews document process changes and the project's effectiveness over time. When the review is completed, FRA will provide to the sponsor a copy of the findings, which may include process-improvement recommendations.

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3. Project reviews are not intended to result in punitive actions by management, labor, or FRA.

Records Retention

1. Pilot project measurement and data-sharing processes will be conducted as detailed in the project's implementation plan or other agreements.
2. All project measurement data, records, and review findings will be retained by the party or parties outlined in the implementation plan throughout the life of the project.

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VI. For More Information

If you have any questions, issues, or concerns, please contact one of our co-leaders for this effort below who can answer your questions and help you communicate this important program to the industry:

Miriam Kloeppe

Operations Research Analyst
FRA Office of Safety
(202) 493-6224
Miriam.Kloeppe@dot.gov

Michael Coplen

Human Factors Program Manager
FRA Office of Research and Development
(202) 493-6346
Michael.Coplen@dot.gov

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