

PIPELINE RISK MANAGEMENT

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the Joint Risk
Assessment
Quality Team

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Program Framework for Risk Management Demonstrations Published in the *Federal Register*

The "Program Framework for Risk Management Demonstrations," published in the *Federal Register* on November 15, 1996, provides guidance for pipeline companies who may want to participate in the Risk Management Demonstration Program getting underway next summer. This guidance document is the culmination of months of work by the Office of Pipeline Safety (OPS) in consultation with representatives of state pipeline regulatory agencies, the oil and gas industries, and local public safety and environmental representatives.

The document incorporates the requirements set forth in Section 5

of the Accountable Pipeline Safety and Partnership Act of 1996, enacted on October 12, 1996, and addresses the safeguards in a Presidential Directive to the Secretary of Transportation, also issued on October 12. The public is invited to comment on the framework through January 14, 1997. It will be published in final form immediately following a January 28, 1997, public meeting to be held in New Orleans, Louisiana.

In the Demonstration Program, OPS will allow companies to substitute compliance with the provisions of an OPS-approved risk management project for compliance with existing standards. The framework



describes how OPS plans to receive, review, approve, and monitor the operators' projects. Operators should consult the "Interim Risk Management Program Standard" to ensure that their project contains all necessary technical and programmatic elements to qualify for the program. This document is available on the Internet at <http://ops.dot.gov>.

The framework emphasizes that the demonstrations are designed to test risk management as a regulatory alternative and to help OPS determine whether and in what form risk management should be permanently incorporated into the federal pipeline safety program.

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Risk Management Gets Wired!

Information on pipeline risk management is now available on the Internet. Just go to the Office of Pipeline Safety home page on the Internet at <http://ops.dot.gov> and click on "Risk Management" to get up-to-date information, news, and announcements about risk management in the pipeline industry. Key risk management documents such as the program standard, regulatory framework, and performance measure guidance are available for downloading. You can even get copies of this newsletter directly on the Internet. In addition, you'll find links to other interesting Web sites containing information on risk management.

The Internet will provide a important link with our stakeholders and other interested parties. This new Web site offers an easy and direct way for individuals to provide feedback to the Office of Pipeline Safety, the Joint Risk Assessment Quality Teams, and others in the Risk Management Demonstration Program.

Program Framework (continued)

In keeping with the Presidential Directive, OPS will approve projects that can achieve superior public safety and environmental protection; that is, more protection than operators could attain through complying with existing regulatory requirements. OPS expects that risk management—the methods and formalized process of interactions and negotiation between government and industry— will result in a more systematic and thorough assessment of risk and risk control options. More risks can be identified, superior decisions can be made, and public safety and environmental protection should improve as a result.

For the demonstration projects, OPS plans to select companies with a demonstrated commitment to work in partnership to evaluate the merits of risk management processes and technologies, and to develop risk management as an integral part of company day-to-day business practices, at least related to the demonstration project. The selection criteria favor projects showing potential for more comprehensive risk management applications.

All participants will be focused on improving safety and environmental results, prioritizing resources more effectively, and enhancing the ability of government and industry to effect positive outcomes. There will be performance measures at the individual project level, as well as at the Demonstration Program level to measure actual achievement. Guidance on performance measure-

ment will be published in the *Federal Register* in late December.

OPS is providing numerous opportunities for affected communities and constituencies to provide input and have questions answered during the review and approval process. While the framework generally describes these opportunities, a communications plan (to be published later this month) will provide more detail on the mechanisms OPS will implement to optimize communication.

Before formal applications are due, OPS will publish for public comment a *Federal Register* notice describing the demonstration projects under consideration and each company's concept for communicating with local safety officials should OPS approve its demonstration project. OPS will encourage local officials and the public with questions about demonstration projects to ask them of state pipeline safety officials who will advise the Project Review Team.

Once the formal application is received and a decision on approval is imminent, a summary of the formal application will be published in the *Federal Register*, and the application will be made available for review and comment through the docket. At each opportunity for notice in the *Federal Register*, OPS will communicate with national public, environmental, and other interested organizations about the sites under consideration so that local officials can be notified and informed about planned program activities.

Talking About Risk

This column in the last issue introduced risk communication and the important role it plays in pipeline risk management. In this issue, we will focus on what an operator can do to improve communication with the public. In future articles, we will feature additional information for operators as well as tips for state and local issues. By engaging people in the process, operators can improve the citizens' understanding of pipeline risks and, by listening to community concerns, operators can build in solutions that work.

Here are some communication program suggestions:

1. **Early involvement.** Operators should consider stakeholder issues and concerns early in the process and develop specific plans for addressing them. This helps maintain focus and continuity, which in turn improves effectiveness over time. In addition, this approach makes better use of resources by leveraging the various program activities.
2. **Research.** Analyze the full range of stakeholder groups and understand their concerns. Learn how they make decisions. This is the foundation of an effective risk communication program. Challenge assumptions about public opinion; experience shows that it's easy to be wrong and mistakes can be expensive. Decisions about risk communication, like decisions about risk management, should have a sound basis in fact, not supposition.
3. **Follow-through.** Continuity is critical to building trust as is listening and acting on feedback. Too

often, industry talks about risk on its own terms and timetable, discussing risk information only when the news is good or when regulation requires disclosure. This can be harmful to your program.

4. **Flexibility.** Just as technology evolves and business priorities change, the stakeholder landscape is constantly shifting. Risk communication is a dynamic process and programs need to take into account the fact that opinions and priorities are always in flux. Pre-planning should provide a flexible

roadmap that allows for change and for midstream refinements based on feedback.

In conclusion, risk communication is a dynamic, interactive process and should not be a periodic data dump or a one-time special event. Risk communication is a continuing program of activities derived from risk assessment data that expresses these data in a manner that is useful and responsive to the public.

In the next issue, we will provide communication program suggestions for federal and state involvement.

Risk Management Public Meeting

January 28, 1997

New Orleans, Louisiana

Draft Agenda

<i>Welcome and Introduction</i>	Rich Felder, OPS
<i>RSPA Perspectives</i>	Kelley Coyner, RSPA
<i>Risk Management Building Blocks Panel</i>	
Regulatory Framework	Stacey Gerard, OPS
Risk Management Program Standard	Denise Hamsher, Lakehead Pipe Line
Performance Measures Guidance	Ivan Huntoon, OPS
Communications Plan	Don Stursma, Iowa Commerce Dept. Stacey Gerard, OPS Mike Neuhard, Fairfax Fire Dept.
<i>Audience Questions</i>	
<i>Lunch</i>	
<i>Gas Prototype</i>	Mike Neuhard, Fairfax Fire Dept. Bruce Hansen, OPS An OPS regional director A gas company representative
<i>Liquid Prototype</i>	Mike Neuhard, Fairfax Fire Dept. Beth Callsen, OPS Gary Zimmerman, Shell Pipeline An OPS regional director
<i>Audience Questions</i>	
<i>Summary</i>	Joe Martinelli, Chevron Pipeline Co. John Riordan, Midcon Corp.
Closing	Rich Felder, OPS

*[Please note that the speakers have been invited.
OPS is waiting for final decisions from some speakers.]*

The Risk Tutor— Basic Concepts in a Company’s Risk Management Program

In the first issue of *Pipeline Risk Management*, we described the three basic components of an operator’s risk management program: risk assessment; risk control and decision support; and performance monitoring and feedback. In the second issue, we described the risk assessment process and in this issue we will focus on risk control and decision support.

Risk Control and Decision Support Process

A risk assessment will result in identification of specific risks associated with a company’s pipeline system and other important details about the system that may or may not have been known previously. Following the risk assessment, a company will initiate a risk control and decision support process to identify actions that can be taken to control the risks; to determine what the relative merits of the various risk control options might be; and to identify activities that will best achieve the company’s risk management goals.

To support risk control decisions, an operator should develop a structured program that will not only identify the risk control issues and options, but also evaluate prevention, mitigation, and response mechanisms.

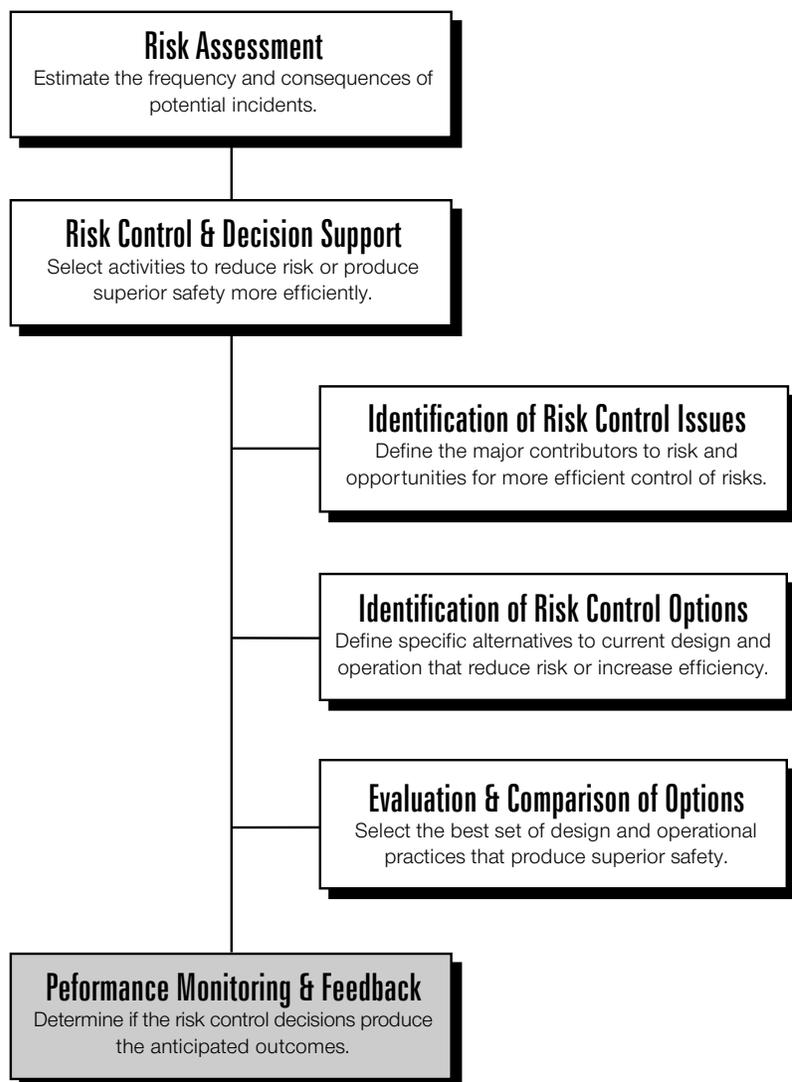
Risk Control Issues

Risk control issues are often identified in the original planning of the risk management program. For example, an issue may have been raised because of a maintenance manager’s concern that a current

maintenance practice is not being conducted in the most cost-effective way to control the risk or because the results from a review of the pipeline system risk assessment identified a pipeline segment with a relatively high risk due to corrosion.

The risk control process may result in the identification of:

- Substantial contributors to overall pipeline system risk.
- Situations in which risk, while not a major contributor to current



The Risk Control & Decision-Support Process

The Risk Tutor *(continued)*

pipeline risk, might still be cost effectively reduced.

- Situations in which the currently applied or required risk control mechanisms may be more costly than equally effective alternative mechanisms.

Risk Control Options

Once the risk control issues have been identified, options to control the risks are identified. Several examples of risk control options may include actions that:

- Alter or replace a design, construction, testing, operational, or maintenance practice in such a way that the current likelihood of pipeline incidents is reduced.
- Alter or replace such practices so that the current level of consequences associated with pipeline incidents, should they occur, is reduced.
- Alter or replace such practices with more cost-effective practices that achieve superior levels of safety.
- Continue current practices to maintain existing levels of risk.

A comprehensive examination of risk control options should consider strategies for prevention, mitigation, and response to pipeline incidents.

Prevention options are designed to reduce the current likelihood of pipeline incidents or to prevent pipeline incidents in a more cost-effective manner. These actions might include:

- Enhancements to pipeline design.

- Physical modifications to the pipeline system hardware and configuration.
- Changes in operational practices, including changes to the allowable operating conditions.
- Changes in maintenance practices, including the nature and frequency of maintenance and inspections.
- Improved qualifications of personnel.
- Changes in the way that pipeline workers, third parties, and the public are notified of safety related conditions and existing pipeline risks.
- Improvements in emergency response plans, equipment, and facilities.
- Actions to limit the proximity of the public to pipelines.
- Actions to limit the potential for environmental damage caused by a release from the pipeline.
- Improvements in the way that pipeline employees and contractors, third parties, and the public are notified of safety-related conditions and existing pipeline risks.
- Improvements in the way the pipeline is monitored and inspected (e.g., leak detection, surveillance, patrolling, etc.).

Mitigation and response options are designed to reduce the size of release and reduce the level of consequences should a pipeline incident occur, or to perform existing protection and mitigation activities in a more cost-effective manner. Examples of actions that might be identified include:

- Physical modifications to the pipeline system hardware and configuration that limit or reduce the release from a pipeline in the case of an incident.
- Improvements in operational practices, including changes in the allowable operating conditions that limit or reduce the release from a pipeline in the case of an incident.
- Improvements to qualifications of personnel and the way that pipeline operators and other personnel are trained to respond to incidents.

Integration of Risk Control Options

Proposed actions to address one risk issue may have adverse effects on another issue or an action designed to solve a particular problem may also provide benefits elsewhere. To identify and address these situations, risk management programs need to include processes to produce an integrated set of potential risk control options, examining the possible conflicts and synergies between and among the individual risk control options identified above.

A key element of these integrative processes include an examination of the residual risk expected to remain after the identified risk control options have been implemented.

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The Risk Tutor *(continued)*

Evaluation and Comparison of Risk Control Options

Risk management programs include a structured process for evaluating and comparing the relative risk reduction benefits and costs of the risk control options being considered. Results of this process should support corporate management decision making.

During the evaluation process, a company may examine:

- Current risks to the public, employees and contractors, and the environment that may exist before the proposed risk control option is implemented.
- Estimated risks to the public, employees and contractors, and the environment that may exist after the proposed risk control option is implemented.
- Cost (or cost savings) of implementing the risk control option; and,
- The potential impact, if any, on the reliability or expected life of the pipeline.

The comparison process considers the risk-reduction benefits, the implementation costs, and other relevant factors associated with each risk control option, and combines these factors into an overall assessment of the relative value of each risk control option. Methodologies for combining these factors can include expert judgment, focus groups, qualitative logic models, priority matrices, weighted benefit-cost ratios, etc.

Selection of Risk Control Options

Once all the options have been identified, evaluated, and compared, risk management programs include a structured process by which management decides whether to take actions that might include:

- Implementing the activity in the short term.
- Deferring implementation of the activity to a later time.
- Performing a portion of the activity.
- Deferring the activity for further development.
- Rejecting the activity.
- Implementing temporary, compensatory actions to limit risk while other options are being developed and considered.

Implementing the selected set of risk control actions on the pipeline system is intended to provide superior safety and environment protection.

We Want to Hear From You!

Risk Management Public Meeting

January 28, 1997

8:00 a.m. — 5:00 p.m.

at the

New Orleans Hilton Riverside Poydras at the Mississippi River New Orleans, Louisiana 70140

Telephone:

Reservations: 1-800-445-8667

or

504-584-3999

Fax: 504-568-1721

RATE: \$70, taxes inclusive

Hotel accommodations are reserved from January 27 through January 28. The block is called the "Department of Transportation, Risk Management Public Meeting."

Check-out is January 29. Please call the Hilton to guarantee reservations by December 27, 1997. Cancel reservations at least 48 hours before check-in date.

Credits

Pipeline Risk Management is published once each quarter by the Joint Risk Assessment Quality Team (JRAQT). The goal of this newsletter is to communicate information to our sponsors and stakeholders on the activities of JRAQT and related risk management activities within OPS and the pipeline industry.

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Joint Risk Management Quality Team Progress Reports

The Program Framework defines how OPS will negotiate, approve, and monitor industry risk management demonstrations. The Framework was published in the *Federal Register* on November 15, 1996. Two prototype risk management demonstration projects illustrating the approval process will be presented at a public meeting in January. The deadline for comments on the framework is January 14, 1997.

The Performance Measures Workgroup has completed a draft document. This document provides guidance on performance measures to operators planning to participate in risk management demonstration projects. OPS will publish this guidance document in the *Federal Register* in late December.

The Risk Management Program Standard, which describes the essential elements and characteristics of an operator's risk management demonstration project, is available for review on the Internet at <http://ops.dot.gov>. Comments may be made at the January 28 public meeting in New Orleans.

A Communications Workgroup has been formed and will publish a communications plan that describes how OPS will communicate with national public, environmental, and other interested organizations about the sites under consideration so that local officials can be notified and informed about planned program activities. The plan will be published in the *Federal Register* before the January public meeting.



October 12, 1996

Congress passed the Accountable Pipeline Safety and Partnership Act of 1996
OPS receives additional direction from the President the same day.

December 16, 1996

Deadline for comments on the Risk Management Program Standard.

January 14, 1997

Comments due on Program Framework.

January 28, 1997

Public Meeting, New Orleans Hilton Riverside:
Public meeting to unveil program building blocks.

Interesting Documents

This section lists a sampling of basic, introductory documents related to risk management. If you want us to include other documents, or wish information on how to obtain any of these documents, contact Janice Morgan at 202-366-2392.

1. *Improving Risk Communication*, R.L. Keeney, D.von Winterfeldt, *Risk Analysis*, 6, 417- 424, 1986
2. *A Risk Analysis of an LNG Terminal*, R.L. Keeney, R. Kulkarni, K. Nair, *Omega*, 7, 191- 201, 1979
3. *Risk Management, Assessment, and Acceptability*, *Risk Analysis*, 5, 98.