

Peer Review Panelist “Charge”



Pipeline & Hazardous Materials Safety Administration

Pipeline Safety Research & Development Program

January 2012

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1.0 Introduction

This document outlines the “Charge” given to peer review panelist of the Pipeline and Hazardous Materials Safety Administration’s (PHMSA) Pipeline Safety Research and Development (R&D) Program within the U.S Department of Transportation (DOT). It contains specific instructions to the peer reviewers regarding what is expected in terms of their review.

This “Charge” is important for the following reasons:

1. It focuses the review by presenting specific questions and concerns that PHMSA expects the peer reviewers to address.
2. It invites general comments on the entire work product. The specific and general comments should focus mostly on the scientific and technical studies that have been applied in a sound manner.

Through the Information Quality Act¹, Congress directed Office of Management and Budget (OMB) to “provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information, (including statistical information) disseminated by Federal agencies.” A resulting OMB Bulletin entitled, “Final Information Quality Bulletin for Peer Review” was issued prescribing required procedures for Federal programs.

The Office of the Secretary of Transportation produced procedures governing modal implementation of this OMB Bulletin. These procedures as well as the OMB Bulletin serve as the basis of and justification for the PHMSA Pipeline Safety R&D Program peer review.

2.0 Research Program Background

PHMSA regulates safety in the design, construction, operation and maintenance, and spill response planning for over 2.5 million miles of natural gas and petroleum pipelines. It’s focused on the continual reduction in the number of incidents on natural gas and hazardous liquid pipelines resulting in death, injury, or significant property damage and also aims to reduce spills that can cause environmental harm.

The vision of the PHMSA Pipeline Safety R&D Program is to support the pipeline safety mission of PHMSA which is “to ensure the safe, reliable, and environmentally sound operation of America’s energy transportation pipelines”. The mission of the PHMSA Pipeline Safety R&D Program is

To sponsor research and development projects focused on providing near-term solutions that will improve the safety, reduce environmental impact, and enhance the reliability of the Nation’s pipeline transportation system.

The PHMSA has regulatory responsibility for the safety of natural gas and hazardous liquid pipelines. Over the past several years, PHMSA has strengthened its role in assuring the safety of

¹ Pub. Law. No. 106-554-515(a)

the nation's pipeline system in numerous ways, including promulgating new regulations on integrity management.^{2,3,4} These new regulations, together with the new inspection processes being used by regulators to evaluate operator compliance, rely for their effectiveness on the operators' access to new technologies that support improved safety and integrity performance and on regulators' access to information on the appropriate use and limitations of these technologies. To address the need for new integrity-related technologies and information on the validity of these technologies, Congress has recently expanded the support for the PHMSA Pipeline Safety R&D Program⁵. As authorized by Congress, PHMSA is sponsoring research and development projects focused on providing near-term solutions that will increase the safe, reliable, and environmentally sound operation of America's energy transmission and distribution pipelines.

The R&D program has been designed to fully support achievement of the PHMSA mission. The R&D Program contributes directly to achievement of the PHMSA mission and by pursuing three program objectives:

1. Fostering development of new technologies that can be used by operators to improve safety performance and to more effectively address regulatory requirements,
2. Strengthening regulatory requirements and related national consensus standards,
3. Improving the state of knowledge of pipeline safety officials so industry and regulatory managers and PHMSA pipeline safety field inspectors can use this knowledge to better understand safety issues and to make better resource allocation decisions improve safety performance.

The R&D Program is organized around eight R&D program elements. Each program element has associated safety issues, technology needs or gaps, and R&D opportunities. Ongoing and future planned projects are linked to at least one of these program elements. The program elements reflect the responsibilities of DOT in the Five Year Interagency R&D Program Plan⁶ and guidance from pipeline experts and stakeholder groups. However PHMSA has drafted a new strategic plan which will consolidate and change some of the current 8 program areas but will not impact the CY 2012 reviews

Program goals are associated with each program element. The goals define the desired outcomes for the R&D projects. Each goal bears a direct relationship to longer-term enhancement of pipeline safety.

² "Pipeline Integrity Management in High Consequence Areas for Hazardous Liquid Operators" (49 CFR Part 195); Rules effective May 29, 2001, and February 15, 2002. <<http://primis.rspa.dot.gov/iim/ruletextamended.htm>>

³ "Pipeline Safety: Pipeline Integrity Management in High Consequence Areas (Gas Transmission Pipelines)"; Final Rule. December 15, 2003. <<http://primis.rspa.dot.gov/gasimp/docs/GasTransmissionIMRule.pdf>>

⁴ "Pipeline Integrity Management in High Consequence Areas (Gas Transmission Pipelines)". Final Rule (as amended), May 26, 2004. <http://primis.rspa.dot.gov/gasimp/docs/FinalRuleAmended_gas_full.pdf>

⁵ Pipeline Safety Improvement Act of 2002 <http://ops.dot.gov/Pub_Law/107_cong_public_laws.pdf>

⁶ Five Year Interagency R&D Program Plan <<http://primis.phmsa.dot.gov/rd/psia.htm>>

Table 1 identifies these program elements and the improvements desired.

Table 1. Program Elements of PHMSA Pipeline Safety R&D Program		
	<u>Program Elements</u>	<u>Program Element Goals</u>
1.	Damage Prevention	Reducing the number of incidents and accidents resulting from excavation damage and outside force
2.	Pipeline Assessment and Leak Detection	Identifying and locating critical pipeline defects using inline inspection, direct assessment and leak detection
3.	Defect Characterization and Mitigation	Improving the capability to characterize the severity of defects in pipeline systems and to mitigate them before they lead to incidents or accidents
4.	Improved Design, Construction, and Materials	Improving the integrity of pipeline facilities through enhanced materials, and techniques for design and construction
5.	Enhanced Operation Controls and Human Factors Management	Improving the safety of pipeline operations through enhanced controls and human factors management
6.	Risk Management & Communications	Reducing the probability of incidents and accidents, and mitigating the consequences of hazards to pipelines
7.	Safety Issues for Emerging Technologies	Identifying and assessing emerging pipeline system technologies for opportunities to enhancing their safety

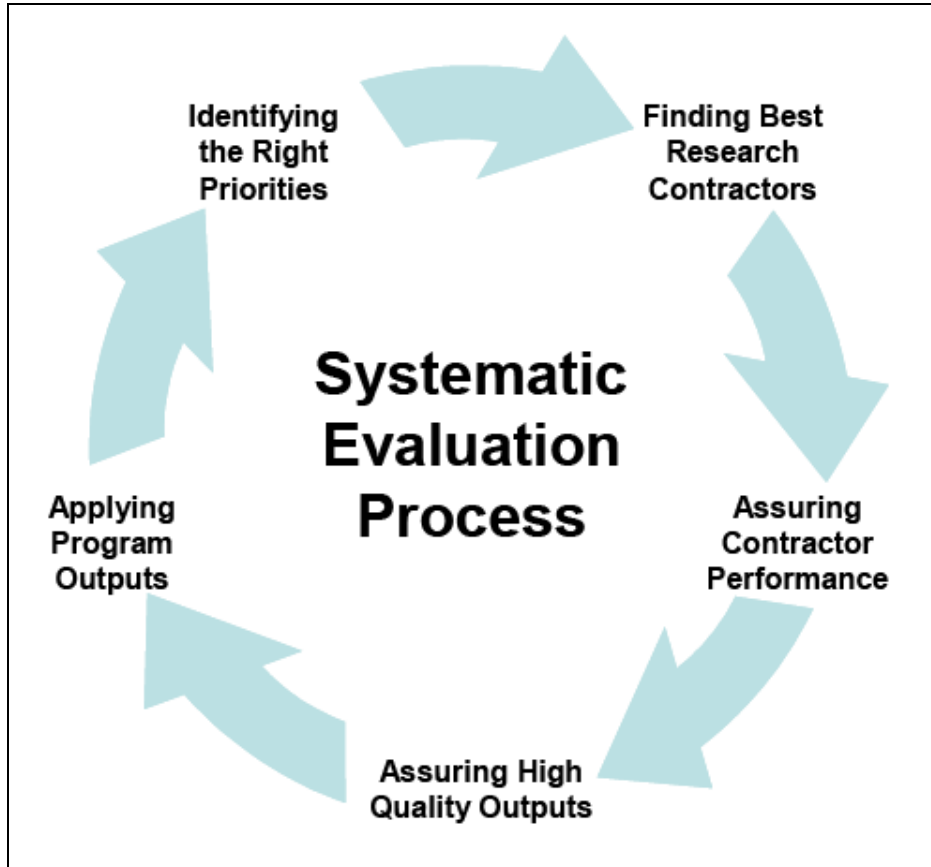
More information on the program strategy is outlined in the R&D Program Strategic Plan and found on the program website at <http://primis.phmsa.dot.gov/rd/> .

3.0 Research Program Quality

While addressing program strategy, a systematic evaluation process was designed and implemented for raising and validating program quality. The process contains five steps and follows research projects from their inception to result implementation. Each step of this systematic process ensures that project outcomes will be of high quality, relevant to the mission of PHMSA and applied to the appropriate end users.

Figure 1 identifies the steps in the systematic evaluation process and how it follows the lifecycle of research projects.

Figure 1. Systematic Evaluation Process



The quality of research projects is first established while identifying the right priorities. This pre-solicitation input at joint government and industry R&D forums and other meetings collaboratively identifies the right priority and structures projects to meet end user technical needs. This allows government and industry pipeline stakeholders to develop a consensus on the technical gaps and challenges for future R&D. It also reduces duplication of programs, factors in ongoing research efforts, leverages funds and broadens synergies.

This quality of right priority and project design is built upon while finding the best research contractors. A merit review panel comprised of representatives from federal and state agencies, and industry operators and trade organizations use strong evaluation criteria to review research white papers and proposals.

A Management Information System (MIS) was developed and utilized to assure awarded projects are performing well. The MIS electronically monitors and tracks contractor performance as the project moves toward completion. This system provides the necessary oversight so specific contractual milestones and accounting are systematically followed as prescribed in the award documents. The system was designed to improve and maintain program quality, efficiency, accounting and accountability. Additional oversight is provided by

Agreement Officer's Technical Representatives (AOTR) who are trained, certified, and designated to each project in accordance to the Federal Acquisition Regulations.

The panel peer review is designed to further establish quality and to keep research projects on track to meet their ultimate goal(s). If the first three steps of the systematic evaluation process are applied correctly and efficiently, then PHMSA pipeline safety research projects are well on their way to be successful. The next section describes the "Charge" given to panelist and further cements the panel peer review process in addressing research relevance, quality, and good performance.

4.0 Peer Review Panelist "Charge"

Thank you for your assistance, time and willingness in further establishing relevance, quality, good performance and keeping PHMSA pipeline safety research projects on track for success!

4.1 Peer Review Coordinator

The Peer Review Coordinator (PRC) organizes, coordinates, monitors, and facilitates the annual panel peer review. The PRC is the main contact for panelists and the researchers involved with a peer review. Your PRC is Mr. Robert Smith of PHMSA.

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4.2 Peer Review Date and Location

The annual peer review of active research projects usually occurs during the first quarter of each calendar year. It will be held over the internet using Microsoft Live Meeting. Information Technology issues will be worked out in advance of the meeting. Complete details will be divulged when a full panel is formed.

4.3 Research Project Subject Matter and Scientific Impact

Specific research project subject matter varies from one annual peer review to another. Generally, subject matter falls within the eight program elements shown in Table 1. Technical issues usually address metallurgical, structural, technological and risk-based subjects commonly seen in the pipeline industry.

Per the OMB Bulletin and DOT guidance, PHMSA pipeline safety research is categorized as *Influential scientific information (ISI)* meaning scientific information that DOT can reasonably

determine “may have or does have a clear and substantial impact on important public policies or private sector decisions.”

4.4 Peer Review Panelists

Panelists are chosen on the basis of three criteria: expertise, balance, and independence. They range from academics to active and or retired pipeline personnel from operators, regulators and trade organizations.

Each panelist will provide the PRC with a short bio describing their work history and qualifications of technical knowledge. This information is incorporated into the peer review report and posted publicly.

4.5 Responsibility of Peer Review Panelists

Panelists are willing participants and have a level of technical or scientific knowledge commensurate with that of the scientific and technical dissemination developers. They need to read all materials, participate fully, and protect confidential information that arises.

Panelists are to:

- 4.5.1 Maintain the confidentiality of all products and deliberations.
- 4.5.2 Perform reviews in a timely fashion.
- 4.5.3 Maintain the highest standards of objectivity.
- 4.5.4 Recuse themselves in cases where unexpected conflicts of interest arise.
- 4.5.5 Agree to have the DOT Office of Chief Information Office (S-80) and Office of General Counsel (C-50) develop and maintain a list of potential external and internal contacts organized in terms of technical expertise. This information will be maintained in strict accordance with Federal statutes and regulations governing privacy protections. Individuals on this list can be employed directly in the peer review process.

4.6 Conflict of Interest & Non-Disclosure

PHMSA/OPS defines “conflicts of interest” as a current financial or other interest that conflicts with the service of an individual on the review panel because it could impair the individual’s objectivity or could create an unfair competitive advantage for a person or an organization.

Panelists will be required not to disclose any information about the research projects presented outside of what is presented in the Peer Review Report.

Panelists will agree to the terms of and sign a Non-Disclosure/Conflict of Interest form prior from becoming an official reviewer at a peer review event.

4.7 Panelist Privacy

All information shown in Peer Review Reports will be reviewed and cleared by each panelist and the PRC prior to public internet postings. All other information such as individual panelist comments will be maintained in strict accordance with Federal statutes and regulations governing privacy protections.

4.8 Panelist Expectations Prior to Peer Review Events

The following items will be given to panelists or sent to the PRC prior to peer review events.

- 4.8.1 A Peer Review Panelist “Charge” document.
- 4.8.2 Non-Disclosure/Conflict of Interest form for signature.
- 4.8.3 One page Curriculum Vitae illustrating your qualifications and work history.
- 4.8.4 Title/Research Organization Name/Researcher Name/Project Summary of each project to be peer reviewed.
- 4.8.5 Draft Agenda for the Peer Review event.

4.9 Scope of the Peer Review

During the annual peer review of projects, the members of the peer review panel will witness focused, high level presentations given by researchers that address specific categories. Each presentation will be no more than 20 minutes with 10 minutes of panelist and 5 minutes of possible written public questioning. A scorecard for rating performance on specific categories will be provided. Each category has equal rating from zero (0) to five (5). Any yes/no answers are assigned five (5) or zero (0) respectively. Panelists are to evaluate each project based on their response to each question. The aim is not to compare one project to another but to provide their best assessment of each project’s performance with addressing the criteria. The scorecard will include the following questions in five performance categories:

1. Project relevance to PHMSA mission.

- Is the project still relevant for enhancing pipeline safety and or protecting the environment?
- Does the project address a technology gap, consensus standard or produce general knowledge?

2. Project management.

- Is the project making progress toward the work scope objectives and the PHMSA goals?

- Is the project being managed on budget and schedule?

3. Approach taken for transferring results to end users.

- Is there a plan for dissemination of results, including publications, reporting, and patents?
- How much end user involvement is incorporated into the work scope?
- For results that may include marketable products and technologies, are commercialization plans established?

4. Project coordination with other related programs.

- Does the project build on, or make use of, related or prior work?
- Is the work of the project being communicated to other related research efforts?
- Has consideration been given to possible future work?

5. Quality of project results.

- Are the intended results supported by the work performed during the project?
- Are the intended results consistent with scientific knowledge and/or engineering principles?
- Are the intended results presented in such a manner as to be useful for identified end users?

These criteria will provide a numeric rating which will be converted and illustrated publicly as "Ineffective", "Effective", "More than Effective" or "Very Effective".

The rating scale is defined to illustrate how well a project is addressing the goals of the peer review.

Very Effective

The most clarity of method in accomplishing the purpose; producing the intended or expected result in a superior manner.

More than Effective

Better, clearer and more distinct in accomplishing the purpose; producing the intended or expected result in more than a satisfactory manner.

Effective

Adequate to accomplish the purpose; producing the intended or expected result in a satisfactory manner.

Ineffective

Not effective; not producing desired results; ineffectual or lacking in the details to support a satisfactory desired outcome.

4.10 Panelist Expectations Post Peer Review Events

At the conclusion of peer review events, panelists will provide the PRC with completed scorecards. This vital information is tabulated and portrayed with constructive recommendations in the Peer Review Report. This report is drafted by the PRC and provided to panelists for review and accuracy.

The draft final report will be presented to PHMSA officials for the official response. A memorandum or written record responding to the peer review and public comments will be issued specifying acceptance or, where thought appropriate, rebuttal and non-acceptance. This information is included in the final report allowing the report's official public posting.

4.11 Contents of the Peer Review Report

The official peer review report will contain the following outline:

- Title Page
- Outline
- Executive Summary
- Introduction
- Program Background
- Peer Review Panelists
- Scope of the Review
- Associated Research
- Peer Review Findings
- PHMSA Official Response
- Appendices (A. PHMSA Acceptance Memo, B. Panelist Curriculum Vitae, C. Project Summaries, D. PRC contact information)

4.12 Administrative Record

The public files associated with pre and post peer review events will be filed on the DOT Dockets Management System (DMS)⁷ which is currently used to support DOT regulatory and adjudicatory actions.

Public information from each annual peer review is posted on the PHMSA Pipeline Safety R&D Program website at http://primis.phmsa.dot.gov/rd/annual_peer_review.htm.

⁷ DMS is an electronic, image-based database in which all DOT docketed information is stored for easy research, and retrieval. See <http://dms.dot.gov>