

Science and Technology Committee Newsletter

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MESSAGE FROM THE CHAIR

Elliot Eder
Eder Garg Law Group, LLC

On behalf of the Science and Technology Committee leadership, I am pleased to present our first committee newsletter for 2005-2006, which is available only in an electronic format. We look forward to the ABA's new year, which started in August. We also were glad to see those of you who could attend the 13th Section Fall Meeting in Nashville this year.

We are a "cross-practice" committee serving members practicing in all three areas of the Section: environment, energy and resources. We believe this cross-practice committee status recognizes that science and technology underlie all three Section areas – environment, energy and resources law – and that our committee provides a valued resource in all three aspects of the Section. We will make a renewed effort to address cutting-edge science and technology issues that are important in the practice of energy and resource law, as well as environmental law.

Plans are underway for the focus and activities of the Science and Technology Committee for the new year – and your suggestions are most welcome. We would like to build upon the committee's past successes. In that regard, we need your input so that we continue to serve the interests of our committee members. We have identified a number of substantive issues for the coming year that we hope to address through conferences, teleconferences or our newsletter. Those issues include:

- science and technology trends post-Katrina;
- new technology developments in major national/state environmental programs;
- scientific peer review issues;
- trendlines in economic development analyses for penalty cases;
- science/technology issues affecting litigation and regulatory practices; and
- modeling cumulative risks and assessing mixture toxicity.

We welcome additional ideas.

With a new ABA year upon us, now is a good time to become more involved in the committee. If you are not yet a committee member, please join us. If you wish to become more active in our committee or just want to share your ideas, please give us a call. We are listing vice chairs in this newsletter, and feel free to contact any of us with your ideas or requests. Also, please take a look at our committee's Web page by visiting www.abanet.org/environ/committees/sciencetech/home.html.

In closing, please bear in mind that this is your committee – your participation is crucial. The committee leadership will continue to do what we can to respond to your information needs, provide a forum for you to share your expertise in the area of science and technology, and accommodate your desire to become more involved in the committee. We look forward to working with you over the next year.

The committee leadership is delighted to have had the opportunity to assist and work with you on matters

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Thaddeus R. Lightfoot, Editor**

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involving science and technology in the practice of law. Indeed, those matters form the basis of our practices and we have appreciated the opportunity to share our expertise and learn from you. We have found our work with the committee fun and professionally enriching. We hope you enjoy the newsletter and your committee.

EDITOR'S INTRODUCTION

**Thaddeus R. Lightfoot
*The Environmental Law Group, Ltd.***

On behalf of the Science and Technology Committee, I am pleased to present the first issue of the committee's newsletter for 2005-06. The committee continues to focus on keeping our members updated on scientific and technological developments in areas of law involving the environment, energy, and natural resources. In keeping with that goal, the organizing theme of this issue is peer review – one of the most topical subjects facing environmental, energy and natural resource law practitioners.

Peer review is commonly understood to be a form of deliberation by qualified experts that involves the exchange of judgments about the methods employed and conclusions drawn in scientific or technical analysis. As discussed in the three articles we present, however, peer review considerations are often more complex than they seem. In the first article, Sunil Garg of The Ecoshelf Group in Short Hills, New Jersey, discusses the U.S. Environmental Protection Agency's Peer Review Policy and Handbook. As Dr. Garg explains, EPA's experience with peer review policies dates to 1994, but more recently the agency published a peer review handbook clarifying the types of scientific and technical work product that should be the subject of peer review. In the second article, I outline the provisions of the controversial final peer review bulletin that the Office of Management and Budget (OMB) published in January 2005. OMB's final bulletin provides the first government-wide standards for determining when and how to conduct peer review. The bulletin applies even to federal agencies, such as

EPA, that have existing peer review policies. Finally, lest our readers believe that peer review in environmental law is an esoteric issue relevant only to a few cognoscenti in our nation's capital, James Payne of The Environmental Law Group in Minneapolis describes the novel use of peer review to solve an intractable technical dispute regarding the appropriate remedy for a major Superfund site in Duluth, Minnesota. Mr. Payne, a former chair of the Science and Technology Committee, explains that the peer review process not only assisted the government and the potentially responsible parties in resolving scientific issues, but also acted as a force for a cooperative and dispassionate approach to remedy selection.

Upcoming newsletters will focus on legislative developments and on administrative and regulatory issues that are of keen interest to committee members. If you have a special interest or idea in either area, we would welcome your topic submission. Simply send an e-mail to the 2005-06 newsletter editor, Terry Quill, at terry.quill@weinberggroup.com.

AN INTRODUCTION TO U.S. EPA'S PEER REVIEW POLICY AND HANDBOOK

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Introduction

The use and importance of peer review in decision-making has apparently been strengthened at the U.S. Environmental Protection Agency (EPA) since the issuance of the 1994 Peer Review Policy, augmented by the availability of the two editions of the Peer Review Handbook issued in 1998 and 2000. That is good. Much progress, however, still needs to be made if the agency is to overcome the perception that it still is more a "command and control" entity than a scientific regulatory agency that bases its decisions on "sound science." There remain significant procedures, policies and practices at the agency that have not undergone peer review and pre-date the Peer Review Policy and the guidance in the Peer Review Handbooks. These

procedures and policies continue to influence and inform agency decision-making in significant ways. Many of the most significant should be re-evaluated not only to determine whether the "science" underlying the regulatory program will pass muster under current peer review processes but also to incorporate new scientific findings. Recent developments, such as guidelines proposed and adopted by the Office of Management and Budget in 2002 and 2004, may well be encouraging developments in this regard.

Peer review is a complex philosophical and procedural subject. This article provides but an overview of certain aspects of the peer review process developed by EPA's Science Policy Council for agency-wide use and implementation, and the role of peer review as an essential component of any valid scientific process. The goal of peer review is to obtain an independent, third-party review from experts who have not contributed to the work product in an effort to ensure scientific integrity and technical credibility of the underlying work product. Peer review involves a critical evaluation of a work plan, a preliminary draft of a report, a scientific methodology, or a final review of a work product before it is adopted by the agency as a policy, regulation, guidance, recommendation or another type of advisory pronouncement.

There have been a number of developments concerning implementation of peer review processes at EPA since an independent Expert Panel on the Role of Science at EPA (the "Panel"), convened by the EPA administrator in 1991, developed a set of recommendations on how the agency could best use "sound science" as the foundation for its decision-making processes. The Panel issued its report in March 1992, entitled "Safeguarding the Future: Credible Science, Credible Decisions" (EPA/600/9-91/050, March 1992) (the "Credible Science, Credible Decisions Report"). That report presented a number of findings and recommendations on the state of science at EPA in general, and quality assurance and peer review in particular. In response to the Panel's work, the EPA administrator issued the June 1994 Peer Review Policy statement designed to reaffirm "the central role of peer review in [EPA's] efforts to ensure that EPA policy decisions rest on sound, credible

science and data” and charging the EPA Science Policy Council with the task of developing procedures and processes for expanding use of peer review in EPA.

The Need for Improving Peer Review at EPA

The Credible Science, Credible Decisions Report was quite direct on the need for the peer review process at EPA. One of its key findings was:

Quality assurance and peer review are essential for ensuring that the best scientific information is used for decisionmaking. EPA requires that its research products undergo peer review, but does not have an Agency-wide policy for *all* science products.

Science activities to support regulatory development – particularly those carried out by the program and regional offices – do not always have adequate, credible quality assurance, quality control, or peer review. Technical studies and data collection efforts, for example, are an important component of science at EPA, and are as important to environmental decisionmaking as scientific and technical research projects. Yet they often lack significant quality assurance and peer review.”

Credible Science, Credible Decisions Report at 24 (italics in original, emphasis supplied). The Executive Summary of Credible Science, Credible Decisions Report recommended that:

Quality assurance and peer review should be applied to the planning and results of *all* scientific and technical efforts to obtain data used for guidance and decisions at EPA, including such efforts in the program and regional offices. Such a requirement is essential if EPA is to be perceived as a credible, unbiased source of environmental and health information, both in the United States and throughout the world.

Id. at 7 (italics in original). Elsewhere, the report stated:

EPA’s goal should be to provide uniform peer review for the most significant science activities in the Agency. EPA should institute an independent peer review program for all its science-dependent products. The current peer review process in ORD [Office of Research and Development] should be reviewed, strengthened, and organized to ensure that *all* in-house and extramural science programs receive timely, credible review.

Peer review and quality assurance should be required at early as well as final stages of an effort. Peer review should be specified in the original study design rather than considered only after the results are obtained. This will ensure that the plans for such products, as well as the results, are scientifically defensible.

Id. at 27-28 (italics in original).

An EPA-wide policy statement to address the various aspects of the peer review process was initially issued in January 1993. It was updated and reissued by the administrator in June 1994 to clarify the central role of the EPA Science Policy Council, formed in December 1993, in “instituting a program to expand and improve peer review in all EPA offices.” *Peer Review Handbook* (2d ed.), EPA-100-B-00-001, Dec. 2000 (the “Handbook”), at A-2. In the June 1994 memorandum issuing the updated policy, the administrator expressed a concern that “EPA does not yet have a comprehensive Agency-wide program for implementing its Peer Review Policy” and welcomed the involvement of the Science Policy Council in implementing the policy statement by developing procedures and practices to increase the effective use of peer review at EPA. *Id.*

Key Aspects of the Peer Review Process

Peer review is a serious process that regulators need to undertake and document with the veracity of any other important agency activity. The credibility and success of a peer review requires careful consideration of several aspects. The statement of issues, usually called the “charge,” submitted for peer review is the key aspect since it determines both the form of the peer

review (e.g., internal versus external) and the likely qualifications of the peer review experts.

Since peer review is intended to uncover and address unresolved scientific, technical or process issues in preliminary work products so that the final work product is based on “sound science,” it is important that the draft work product submitted for peer review is well researched, written and referenced. The peer review should serve to enhance and improve the quality and credibility of the work and should be more than just another hoop to jump through. The necessary time and resources needed for peer review should be planned into the timeline for the decision-making process. Benefits usually will justify any additional costs, since by ensuring a sound basis for decisions peer review reduces the likelihood of legal challenges that might force the agency to revise its work product.

Peer reviews are also vitally important because they provide the best opportunity for identifying problems in data and conclusions, and they can lead to development of new information and analyses not previously considered by the agency. In this way, the peer review process can identify areas for new research that could significantly alter and improve the reviewed work product or its conclusions. Accordingly, peer reviews should be undertaken before seeking public comment and certainly before the close of any public comment period.

Another critical, and perhaps the most important, aspect of undertaking a peer review is selection of the peer reviewers. Peer reviewers should be selected for their independence and subject-matter expertise. The panel should have a balance of technical skills and relevant experience to handle the various issues outlined in the “charge.” Every effort should be made to find peer reviewers who do not have real or perceived conflicts of interest or bias. Determining whether there is a conflict of interest – generally defined as a situation where the expert has a stake in the outcome of the process they are charged with reviewing – is probably the thorniest area. This is particularly true in areas of inquiry where there are only a few national or even international experts to begin with, so that it is difficult to choose peer reviewers who

have no involvement in the conduct of the peer review and no interest in its conclusions.

Clearly, potential reviewers with a direct financial stake in the outcome of the particular matter under review should be excluded. Other reviewers may have potential non-financial interests, such as academic or philosophical stakes, in the outcome and may well be among the best-informed experts on the subject matter at issue. Such experts may be used with proper disclosure of the conflicts of interest on a panel that, on the whole, is balanced in the points of views of the reviewers.

Peer Review of Scientific and Technical Work Products under the 1994 Peer Review Policy and the 2000 Peer Review Handbook

The main themes of the 1994 Peer Review Policy are:

Major scientifically and technically based work products related to Agency decisions should normally be peer-reviewed. Agency managers within Headquarters, Regions, laboratories, and field components determine and are accountable for the decision whether to employ peer review in particular instances and, if so, its character, scope, and timing. These decisions are made in conformance with program goals and priorities, resource constraints, and statutory or court-ordered deadlines. For those work products that are intended to support the most important decisions or that have special importance in their own right, external peer review is the procedure of choice. Peer review is not restricted to the penultimate version of work products; in fact, peer review at the planning stage can often be extremely beneficial.

See Peer Review and Peer Involvement at the U.S. Environmental Protection Agency, Carol M. Browner, June 7, 1994 (emphasis supplied).

The Science Policy Council issued the second edition of the Peer Review Handbook (the “Handbook”) in December 2000 to implement the Peer Review Policy and the generally accepted aspects of the peer review

process. It addressed comments received by the Science Policy Council since the first edition was issued in 1998 and incorporated recommendations from the EPA Science Advisory Board's review of the Handbook, an EPA Office of Inspector General report concerning procedures for the selection of peer reviewers, and a report by the National Research Council regarding management and peer review procedures at EPA.

Scientific and technical work products that are used as the basis to support a regulatory program, policy pronouncement, research agenda or any other agency action or position, are subject to peer review under the Policy and the Handbook, if they are considered to be "major." The term "scientific and technical work" is broadly defined to include not only science and technology based disciplines but also economics and social science. Accordingly, the following are subject to peer review provided they are determined to be "major" work products: risk assessments, technical studies and guidance (except "guidance providing policy judgments"); analytical methods; scientific database designs; technical models and protocols; statistical surveys and studies; technical background materials; research plans and strategies; economic analyses and reports; and social science work products concerning studies of human motivation, behavior, interactions and other social processes relevant to the environmental issues being addressed. Such social science studies could encompass risk perception and communication, environmental justice concerns, perception of quality-of-life issues, decision-making processes, and design and conduct of public participation opportunities and meetings.

The Handbook notes that documents that (i) address procedural matters, (ii) constitute policy pronouncements, (iii) are compilations of conference proceedings or (iv) are decision documents (such as Superfund Records of Decision) are not normally considered to be scientific or technical work product. However, conference proceedings that are used as the scientific basis for an agency decision or action, and the underlying scientific and technical work conducted to support Records of Decision, are proper candidates for peer review if considered "major."

Determination of "Major" Work Products Subject to Peer Review

While the Handbook provides some clarity as to what constitutes scientific and technical work, it takes on a "we will know it when we see it" approach on what is "major" and what is not. It states:

The continuum of work products covers the range from the obviously major, which clearly need peer review, to those products which are not major and clearly don't need peer review. The rest of the work products fall in-between these two distinctions.

Handbook § 2.2.3, p. 26. The responsibility for judging whether work product meets the "major" criteria is left to the "Decision Maker" – a class that is composed of assistant and regional administrators or their designees. The Handbook does provide a rule-of-thumb observing that "if there is any doubt about whether a work product needs peer review, then go ahead and consider it a candidate for peer review." *Id.* Although the Handbook contains a list of criteria for the Decision Maker to consider in determining which scientific and technical work products from the in-between group should be considered candidates for peer review, it provides little, if any, decisional norms to guide the Decision Maker's discretion.

The Handbook offers guidance on whether peer review is needed under a number of scenarios generally encountered in environmental and natural resources practice. A few key examples are: (1) scientific and technical work product used by the agency to support a site-specific decision is subject to peer review; (2) environmental impact statements (EISs) under the National Environmental Policy Act (NEPA) may be subject to peer review, particularly if the agency is developing the EIS as the lead agency under NEPA; (3) environmental regulatory models are subject to peer review under specific guidelines established by the agency; and (4) major work product independently generated by other organizations, such as other federal agencies, state and tribal agencies, environmental groups, industry and interagency groups if the work product is considered important to EPA's decision-making.

The Handbook notes that while peer review of journal articles is a “satisfactory form of peer review” that lends credibility to the underlying scientific work product, major agency work products are candidates for peer review even when supported by peer reviewed journal articles. *Id.* § 2.4.4, at 42. This is because, in most cases, peer review by scientific journals may not cover issues and concerns the agency may be trying to address through a contemplated action.

Major Work Product Not Subject to Peer Review

The Handbook also notes that there are several circumstances under which an otherwise major scientific or technical work product may not be subject to peer review. For example, a new peer review is not required for previously reviewed work even if the previous work is applied in a manner that departs from its original scientific or technical approach, so long as that departure is not considered to be “significant.” The Handbook does not specifically indicate how to conduct or document the “no significant departure” analysis. In addition, scientific and technical methodologies or information that are “commonly accepted” in the field do not require a peer review, but the agency must prepare and file “appropriate documentation to support the commonly held view.” Time constraints imposed by statutory or court ordered deadlines “or other time constraints,” whatever they may be, may also limit or preclude peer review. The Handbook cautions that these limits are reserved for rare cases and should not substitute for lack of planning. Finally, resource limitations may “very rarely” preclude peer review with concurrence of EPA management. *Id.* § 2.3.1, at 37-38.

Other Salient Aspects of EPA’s 2000 Peer Review Handbook

Peer Review vs. Peer Input

The second edition of the Handbook is a comprehensive guidance document. It defines peer review as “a documented critical review of a specific Agency major scientific and/or technical work product

conducted by qualified individuals (or organizations) who are independent of those who performed the work, but who are collectively equivalent in technical expertise (*i.e.*, peers) to those who performed the original work.” *Id.* § 1.2.3, at 10. The Handbook correctly cautions that peer input is not a substitute for peer review. The goal of peer review is to obtain an independent, third party review from experts who have not contributed to the work product and have no stake in the outcome, in an effort to ensure scientific integrity and technical credibility of the underlying work product. In contrast, peer input serves to enhance the scientific basis and veracity of the work but it involves ongoing consultation and advice by experts, both inside and outside the agency, during the development of the scientific and technical work. Experts who provide peer input rarely, if ever, become peer reviewers since they are no longer independent once they have contributed to the development of the work product.

Public Comment

The Handbook clarifies that public comment under the Administrative Procedure Act or a specific statute may not substitute for peer review. Similarly, the Handbook specified that stakeholder involvement needed to reach consensus on implementation of a particular policy may not take the place of peer review. These are entirely different processes and not substitutes for peer review.

Peer Review and Regulatory Negotiations

Peer review has an important role in two other key decisional processes at EPA: (1) development of regulations; and (2) regulatory negotiations. Obviously, the notice and comment rulemaking process and negotiated rulemaking are not subject to peer review, but “peer review of scientific and technical work products that support rulemaking actions is an important, fundamental step in the policy setting process and which affirms the credibility of the Agency.” *Id.* § 1.2.10, at 13. Similarly, to ensure that final decisions are based on sound and credible science, the *major* scientific and technical work in support of regulatory negotiations must be peer reviewed before commencement of the negotiation. The key issue is whether the rule is supported by a

The Information Quality Act, also known as the Data Quality Act, was a two-paragraph insert into the Treasury Appropriations Act for fiscal year 2001. *See* Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106, § 515 (2001). Supplementing the Paperwork Reduction Act, 44 U.S.C. § 3501 *et seq.*, the Information Quality Act directed OMB to issue guidelines to “provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information” disseminated by federal agencies. *See* Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106, § 515(a). OMB published the final “bulletin” – which is OMB parlance for legally binding language designed to guide the actions of federal agencies – in an attempt to satisfy the requirements of the Information Quality Act.

The final bulletin provides the first government-wide standards for determining when and how to conduct peer review. According to OMB’s preamble to the final bulletin, peer review “is a form of deliberation involving an exchange of judgments about the appropriateness of methods and the strength of the author’s references” in published scientific and technical information. 70 Fed. Reg. 2665. In describing the rationale for the final bulletin, OMB acknowledges that “[s]ome agencies have formal peer review policies, while others do not.” *Id.* But according to OMB, “[e]ven agencies that have such [formal peer review] policies do not always follow them prior to the release of important scientific products.” *Id.* The OMB preamble to the final bulletin, however, does not provide any specific examples of the failure of federal agencies to follow existing formal peer review policies. OMB also notes that the federal government lacks a “formal interagency mechanism . . . to foster cross-agency sharing of experiences with peer review practices and policies,” and that

the public lacked a consistent way to determine when an important scientific information product is being developed by an agency, the type of peer review planned for that product, or whether there would be an opportunity to provide comments and data to the reviewers.

Id. To respond to these shortcomings, OMB published its final peer review bulletin, which “establishes minimum standards for when peer review is required for scientific information and the types of peer review that should be considered by agencies in different circumstances.” *Id.*

An Overview of the Final Bulletin’s Provisions

The Scope of Peer Review and Procedural Considerations

The final bulletin consists of 12 sections. Section I includes the bulletin’s definitions. Section II requires each federal agency to conduct peer review of “influential scientific information” before “dissemination” of that information. The final bulletin defines “influential scientific information” as “scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions.” 70 Fed. Reg. 2675. “Dissemination” under the final bulletin means “agency initiated or sponsored distribution of information to the public,” and does not include internal government distribution or responses to requests under the Freedom of Information Act. 70 Fed. Reg. 2674. OMB explains in the final bulletin’s preamble that “[a]n information product is not covered by the Bulletin unless it represents an official view of one or more departments or agencies of the Federal government.” *Id.* at 2667. OMB’s September 2003 “Proposed Bulletin on Peer Review and Information Quality” (“proposed bulletin”) applied to “regulatory information” rather than “scientific information.” 68 Fed. Reg. 54,023, 54,028 (Sept. 15, 2003).

OMB shifted its peer review emphasis from “regulatory information” to “scientific information” in its April 28, 2004 “Revised Information Quality Bulletin for Peer Review” (“revised bulletin”). As OMB explained when it published the revised bulletin, commenters on the proposed bulletin “indicated that it would be difficult to determine in advance whether an information product might reasonably be expected to be used in support of a regulatory action in the future,” so OMB removed the specific focus “on the potential

regulatory impact of the information disseminated.” *Summary of Public and Agency Comments on Proposed Bulletin on Information Quality and Peer Review, Including Responses by OMB*, Apr. 15, 2004, at 3.

Section II of the final bulletin also addresses issues such as the type of peer review that an agency may conduct, the selection of reviewers, conflicts of interest, the timing of peer review, the scope of the review and public participation. Rather than mandate a precise framework for peer reviews of influential scientific information, section II outlines general considerations and provides federal agencies discretion in fashioning specific procedures to comply with the final bulletin. According to the final bulletin’s preamble, “[a]gencies are directed to chose a peer review mechanism that is adequate, giving due consideration to the novelty and complexity of the science to be reviewed, the relevance of the information to decision making, the extent of prior peer reviews, and the expected benefits and costs of additional review.” 70 Fed. Reg. 2668. OMB also notes the National Academy of Public Administration’s suggestion that “the intensity of peer review should be commensurate with the significance of the information being disseminated and the likely implications for policy decisions.” *Id.*

Section III provides heightened peer review requirements for “highly influential scientific assessments.” The final bulletin defines a “scientific assessment” as “an evaluation of a body of scientific or technical knowledge, which typically synthesizes multiple factual inputs, data, models, assumptions, and/or applies best professional judgment to bridge uncertainties in the available information.” *Id.* at 2675. A scientific assessment is “highly influential” if it could have a potential impact of more than \$500 million in any year, or it is “novel, controversial, or precedent-setting or has significant interagency interest.” *Id.* These criteria are narrowed from the proposed bulletin, which applied section III’s heightened peer review requirements to “significant regulatory information” that supported “a major regulatory action,” had an impact of more than \$100 million in any year or that OMB determined “is of significant

interagency interest or is relevant to an Administration policy priority.” 68 Fed. Reg. 54,027. Peer reviews of “highly influential scientific assessments” under the final bulletin are subject to all of the section II requirements for “influential scientific information,” as well as requirements that agencies avoid using the same reviewer on multiple assessments, provide enhanced opportunities for public involvement, and consider commissioning an independent entity to manage the peer review process. 70 Fed. Reg. 2676.

Use of Alternative Procedures and Reporting Requirements

Under section IV of the final bulletin, agencies may employ certain peer review procedures as an alternative to those set forth in sections II and III. In particular, agencies may rely upon reports produced by the National Academy of Sciences (NAS), commission the NAS to peer review an agency’s draft scientific information or use an alternative peer review process that OMB approves in advance. *Id.* Section V requires federal agencies to develop systematic peer review agendas and update the agendas at least every six months. In a nod to the importance of the information superhighway, agencies must post the agendas on their Web sites and provide a Web link from the agenda to each document that the agency has made public under the authority of the final bulletin. Section V also encourages agencies “to offer a listserv or similar mechanism to alert interested members of the public when entries are added or updated.” *Id.* at 2676-77.

Section VI mandates annual reports to OMB detailing compliance with the final bulletin. Among the topics to be discussed in the annual reports are the number of peer reviews that an agency conducts; the number of times it employs alternative peer review procedures; and how frequently the agency invokes the waivers, deferrals, or exemptions in sections VIII and IX (discussed below). *Id.* at 2677. Section VII provides that agencies must document compliance with the final bulletin in administrative records supporting regulatory decisions. *Id.*

Deferrals, Waivers, Exemptions and OMB Oversight

Section VIII establishes certain deferrals and waivers of the final bulletin's requirements. The proposed bulletin provided that OMB, not an agency head, could waive the peer review requirements "if an agency makes a compelling case that waiver is necessitated for specific information by an emergency, imminent health hazard, homeland security threat, or some other compelling rationale." 68 Fed. Reg. 54,028. Many commenters on the proposed bulletin objected to this provision, opining that the head of a federal agency – not OMB – should have the authority to waive peer review requirements in an emergency. *See Summary of Public and Agency Comments on Proposed Bulletin on Information Quality and Peer Review, Including Responses by OMB*, Apr. 15, 2004, at 5. The final bulletin grants the head of a federal agency the authority to "waive or defer some or all of the peer review requirements" of the bulletin "where warranted by a compelling rationale." 70 Fed. Reg. 2677. Should an agency head defer peer review requirements "prior to dissemination," the agency shall thereafter conduct peer review "as soon as practicable." *Id.*

The September 2003 proposed bulletin did not include any exemptions from the peer review process. Several commenters on the proposed bulletin encouraged OMB to include exemptions, particularly for time-sensitive public health and safety information and for reports generated by the NAS. In section IX of the final bulletin, OMB specifically exempts from peer review information that relates to "certain national security, foreign affairs, or negotiations involving international trade or treaties" where compliance would "interfere with the need for secrecy or promptness." *Id.* Similarly, section IX exempts information disseminated in the course of "an individual agency adjudication or permit proceeding," unless the agency determines that peer review is "practical and appropriate" and that the information disseminated is scientifically or technically "novel" or may have precedent-setting influence. *Id.* Health or safety information is exempt where an agency determines that dissemination is "time-sensitive, (e.g., findings based primarily on data from a recent clinical trial that was

adequately reviewed before the trial began)." *Id.* Other exemptions include agency regulatory impact analyses, routine statistical information, financial and related information, and information "disseminated in connection with routine rules that materially alter entitlements, grants, user fees, or loan programs, or the rights and obligations of recipient thereof." *Id.*

Section X states that OMB is responsible for overseeing implementation of the bulletin, and provides for an interagency working group to discuss progress in meeting the bulletin's peer review goals. Section XI notes that the bulletin applies to information disseminated on or after June 16, 2005, that agencies must begin preparing the section V peer review agendas for "highly influential scientific assessments" effective June 16, 2005, and that agencies must be preparing section V peer review agendas for "influential scientific information" effective Dec. 16, 2005. *Id.*

Judicial Review

Section XII provides that the bulletin does not create any legal rights enforceable against the federal government. OMB added section XII to the final bulletin because a number of public and agency comments on the proposed bulletin expressed concern that OMB was suggesting "new avenues for litigation against agencies." *Summary of Public and Agency Comments on Proposed Bulletin on Information Quality and Peer Review, Including Responses by OMB*, Apr. 15, 2004, at 9. The final bulletin now states that it is "intended to prove the internal management of the executive branch, and is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity," against the federal government. 70 Fed. Reg. 2677.

OMB's September 2003 proposed bulletin included a provision requiring federal agencies to provide OMB copies of so-called "correction requests" filed under the Information Quality Act. The Information Quality Act required that federal agencies create administrative mechanisms to allow affected persons to petition for a correction of information maintained and disseminated

by an agency that did not comply with the act. A number of federal agencies, including the U.S. Environmental Protection Agency, now have policies governing these correction requests. See United States Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-008 (Oct. 2002). OMB's September 2003 proposed bulletin mandated that federal agencies provide OMB a copy of each "non-frivolous" correction request within seven days of receipt. OMB could also require agencies to provide it with a copy of an agency's draft response to the correction request, and to consult with OMB to "ensure that the response is consistent with the Information Quality Act, OMB's government-wide Information Quality Guidelines, and the agency's own information guidelines." 68 Fed. Reg. 54029. At least one commentator suggested that the provision improperly interjected OMB into the resolution of information quality complaints. Sidney A. Shapiro, *OMB's Dubious Peer Review Procedures*, 34 ENVTL. L. REP. at 10,064, 10,070-71 (Jan. 2004). The final peer review bulletin does not include the "correction requests" provision.

Conclusion

Although OMB's Final Information Quality Bulletin for Peer Review published on Jan. 14, 2005 addresses some of the concerns raised by its September 2003 Proposed Bulletin on Peer Review and Information Quality, the final bulletin is still stirring controversy. On Feb. 16, 2005, Rep. Henry Waxman (D-CA), the ranking minority member of the House Government Reform Committee, and Rep. Bart Gordon (D-TN), the ranking minority member of the House Science Committee, introduced the Restore Scientific Integrity to Federal Research and Policymaking Act (H.R. 839). The legislation, which includes the finding that 48 Nobel laureates "have raised concerns about political interference with science in the executive branch of the Federal Government," would remove authority for federal peer review from OMB and instruct federal agencies to establish their own peer review standards. Absent congressional action in the next few months, however, federal agencies will have

to begin preparing peer review agendas for "highly influential scientific assessments" under section V of the final peer review bulletin. The outcome of the political struggle over the final OMB peer review bulletin is far from clear. What is certain, however, is that OMB is likely to exercise considerable influence—if not outright regulatory control—over the peer review processes of the federal government.

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Science and Technology Committee Newsletter

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THE USE OF PEER REVIEW TO RESOLVE REMEDIATION DISPUTES UNDER SUPERFUND: A CASE STUDY

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Introduction

A unique use of peer review recently ended a longstanding controversy over the remediation of a complex contaminated sediment site in Minnesota and resulted in the design and selection of a remedy that the state environmental agency finds acceptable and the responsible parties have agreed to implement. The Minnesota Pollution Control Agency (MPCA) did not use peer review as it is normally used by a regulatory agency – that is, to review a major scientific work product of the agency before it is published. Rather, MPCA and the companies named as responsible parties (“the Companies”) jointly established an independent peer review team (PRT) charged with opining on a series of disputed, complex technical questions that had prevented MPCA and the Companies from agreeing on the nature of the site remedy. The PRT not only helped the parties to resolve their scientific disputes, but its presence as a independent sounding board helped the parties to pursue a more cooperative and dispassionate approach to remedy selection. Perhaps more importantly, the PRT, in the end, exceeded its initial charge and informally promoted the development of a new, “hybrid” remedy that was not among the remedies it was initially charged with reviewing. Discussions of a potential hybrid led to a two-day community meeting in which MPCA, the Companies, the PRT and dozens of other federal, state and community stakeholders worked together to design several potential hybrids that met some or all of the interests identified by participants. On the basis of these discussions, MPCA and the Companies entered into more detailed and intensive negotiations that produced an innovative remedy which the PRT has found to be technically sound, which meets most of the primary interests identified by the major stakeholders, and which the Companies have agreed to implement.

The Remediation Dispute: Dredging or Capping?

The St. Louis River/Interlake/Duluth Tar (SLRIDT) Site is a 255-acre site located in West Duluth on the St. Louis River, a few miles upriver of Duluth Harbor and Lake Superior. Much of the site is water, including a 41-acre river embayment (Stryker Bay), two working boat slips and associated wetlands. The site has been used for industrial purposes since at least the 1890’s, and both land and sediments at the site became contaminated with polyaromatic hydrocarbons (PAHs) as a result of coking, gas manufacturing and tar refining operations that occurred on-site during the first half of the last century. The U.S. Environmental Protection Agency (EPA) placed the site on the National Priorities List (NPL) in 1986, but MPCA has directed its remediation under the Minnesota Superfund law, the Minnesota Environmental Response and Liability Act (MERLA), Minnesota Statutes Ch. 115B and an enforcement deferral agreement with EPA. The ultimate decision maker for MPCA is its nine-member citizen board, which is appointed by the governor and on which the MPCA commissioner sits.

The Companies completed remediation of the land portions of the site in the mid-1990s and conducted their first studies of the contaminated sediments from 1996 through 1999. Essentially, the remediation issue posed by the sediments was that posed by contaminated sediment sites everywhere: should the sediments be dredged or should they be capped? In 1999, the MPCA staff, having eliminated all capping remedies from the Companies’ feasibility study (FS), proposed a remedy that would have required the Companies to dredge all contaminated sediments and place them into a confined disposal facility (CDF) to be constructed in one of the boat slips. The Companies estimated that the staff’s remedy could potentially cost \$100 million. The Companies then presented the staff with a supplement to the FS, responding to the staff’s concerns with the capping remedies that it had rejected. In their supplement, the Companies recommended a new “wetland cap” remedy under which the contaminated sediments would be capped, but many of the areas of open water to be capped would be converted to wetland rather

than to upland. The staff summarily rejected the wetland cap remedy as an unproven and ineffective technology and requested that the MPCA board adopt a Record of Decision (ROD) reflecting its own proposed dredging plan.

After two extremely contentious meetings before the MPCA board, one of which served as a public hearing in Duluth, it became clear that a decision adopting the proposed ROD would result in litigation rather than sediment cleanup. The MPCA staff voiced numerous concerns about the effectiveness of the Companies' proposed capping remedy, but also seemed convinced that the Companies, in recommending the wetland cap, were motivated solely by cost considerations and not by concern for the environment. On the other hand, the Companies believed that the staff was predisposed towards dredging and had never seriously evaluated any capping remedy. The Companies failed to discern any sound scientific bases for many of the staff's concerns about capping, and they challenged the technical competence of a staff team that contained no engineers but had rejected the capping remedy on engineering grounds. Adding to the disputatious mix were the varying and often conflicting interests of other stakeholders: neighbors with homes on Stryker Bay, who feared that capping would eliminate their waterfront views and recreational access; neighbors to the north of the site, who feared that dredging would last for years and release noxious, and perhaps toxic, odors to their neighborhood; the current landowner whose shipping business might or might not have to move depending on the remedy selected; and other regulatory and commercial interests concerned with any remedy's effect on habitat, navigation and shipping, local land use and the water quality of Lake Superior. It also became clear during the meetings that though the primary dispute was the choice between dredging and capping, underlying that primary issue were a series of disputed technical questions: Would a cap survive the ice produced by a Minnesota winter or the seiches (inland tides) produced by Lake Superior? Would upwelling groundwater at the site carry contamination through a cap? Would dense non-aqueous phase liquid (DNAPL) in the sediments escape from under a cap? Would dredging release contaminants into Lake Superior or produce a residue

that would contaminate sediments at the site? Would dredging release toxic air pollutants into the surrounding neighborhoods? How much would the capping or dredging remedies cost and how long would they take to complete? Numerous other technical questions also remained unanswered. In 1999, sediment remediation techniques were even less understood than they are today. As a result, the positions taken by the agency staff and the Companies with respect to the disputed technical issues were, if not entirely speculative, nevertheless often based only on educated predictions rather than on actual data, studies or experience.

Among the persons to whom this circumstance became clear were the MPCA board members, who bore the ultimate responsibility for protecting Lake Superior, the environment at the site, and the health and welfare of the surrounding community. In part because the Companies had argued that many staff positions should be subjected to independent review, but primarily because they themselves seemed uncomfortable with making a major remediation decision on the basis of disputed science, a number of board members suggested the need for peer review. One member in particular recommended that the staff seek out the sediment expertise of the U.S. Army Corps of Engineers. A third MPCA board meeting was held in late 1999, during which the staff's ROD was scheduled for adoption. At that meeting, however, the board decided to reopen the feasibility study, provided that an agreement could be negotiated with the Companies defining the scope of the reopened study and incorporating an independent peer review component into the remedy selection process. In the following few months, the staff and the Companies negotiated such an agreement – the “PRT Agreement” – and the MPCA board approved it in early 2000.

The PRT Agreement

The PRT Agreement (Agreement) provided, among other things, for: (1) the evaluation of four specified remedial alternatives in a reopened FS, (2) the establishment of the PRT, (3) the identification by the PRT of missing information or “data gaps” needed to evaluate the four alternatives, (4) the undertaking of

studies by the Companies to obtain that missing information and (5) review and comment by the PRT on both the Companies' studies and the remedial alternatives.

The Alternatives. The Agreement limited the scope of the reopened FS to only four remedial alternatives: the dredging remedy proposed by the MPCA staff, the wetland cap remedy proposed by the Companies, a "no action" alternative and a second dredging remedy under which dredged material would be transported offsite rather than placed in an on-site CDF. The Agreement, however, also provided that it was not "intended to preclude the consideration of new information or new ideas that may lead to modification of one or more of the four alternatives."

The PRT. The Agreement also established a PRT of eight experts, each of whom was required to satisfy the description of "independent peer reviewer" set forth in the EPA Peer Review Manual (January 1998). Two individuals each were to provide expertise related to the four topics that the MPCA staff and the Companies had identified as most relevant to their technical disputes: (1) dredging contaminated sediment, (2) capping contaminated sediment, (3) hydrogeology (groundwater/surface water interactions) and (4) estimating the costs of cleaning up contaminated sediment. A peer review coordinator, who would not be a member of the PRT, was also to be hired to coordinate and support the activities of the PRT and to serve as the PRT's primary contact with the MPCA staff and the Companies. The parties decided not to seek expertise from technical other areas, such as risk assessment, because they believed their disputes touching on those areas had been adequately resolved.

To select PRT members, the Agreement provided that the MPCA staff and the Companies would each prepare a list of recommended PRT candidates. The parties would then compare lists and choose commonly listed candidates or otherwise try to reach agreement. Though the Agreement described a process for selecting members in the event consensus could not be achieved, in fact consensus was achieved. The nationally recognized experts selected for the PRT included three current or retired employees of the

Army Corps of Engineers, an employee of the U.S. Geological Survey, a representative of academia and four engineers in private practice. The PRT coordinator also worked for a private engineering and consulting firm. None of the individuals selected, including the coordinator, worked in Minnesota.

Data Gaps. The Agreement provided for existing reports and studies to be reviewed by two groups – a team of representatives from the EPA and Army Corps of Engineers, and the PRT. The EPA/Corps team was to be the first to identify any data gaps in the existing reports that needed to be filled before an adequate evaluation of alternatives could occur. The charge to the PRT was to review the conclusions of the EPA/Corps team, to come to its own conclusions about the data gaps that needed filling, and then to suggest methods for filling those gaps. The PRT was guided in this task by a list of 14 technical issues that the MPCA staff and the Companies had identified as needing resolution. The charge also asked the PRT to comment on the work plan for filling the data gaps that the Agreement required the Companies to prepare and implement, and to comment on the final report prepared by the Companies presenting the newly acquired data.

Of the 14 technical issues, five issues related specifically to dredging (*e.g.*, "What is the anticipated nature . . . of the expected post-dredging residue and what reasonable measures would be necessary to achieve remedial goals?"). Five additional issues related specifically to capping (*e.g.*, "Is there NAPL material present in the sediments of the site in such form that it would migrate laterally when capped, and, if so, can such migration be prevented?"). The final four issues related to all alternatives (*e.g.*, "Are the schedule and cost estimates reasonably complete and accurate for purposes of identifying the most cost-effective alternative? If not, how could they be improved?"). The 14 technical issues did not, however, include any mixed questions of science and policy, such as "What should the cleanup goals for the site be?"

Comment on Alternatives. Finally, the Agreement charged the PRT to review the revised feasibility study

that was to be prepared using the newly acquired data and to comment on the advantages and disadvantages of each alternative remedial action, using the “threshold criteria” and “balancing criteria” of the National Contingency Plan (NCP). 40 C.F.R. §§ 300.430(3)(iii)(A)-(G). MPCA was concerned that the PRT’s review of the FS might implicitly usurp its own role as decision maker. Thus, while MPCA agreed to consider the PRT’s work product “in good faith,” the staff insisted on including a statement in the Agreement that

the MPCA shall in any case retain all its rights and obligations to reach its own conclusions and to select a remedy consistent with applicable law.

For their part, the Companies remained wary of an agency staff that they believed had acted arbitrarily in initially selecting a dredging remedy. Thus, the same section of the Agreement also provided that

if any party disagrees with any aspect of the report or other work product of the Peer Review [Team], it shall explain in writing the factual basis and reasons for the disagreement and submit that explanation to the Peer Review Group for comment.

The agency staff would not be able to disregard the PRT’s recommendations without setting forth a specific rationale that could be challenged by the Companies for arbitrariness.

Remedy Implementation. In return for the delay in remedy selection caused by reopening the FS and submitting the FS to peer review, and perhaps because they believed the Companies sought to reopen the FS only to avoid their remediation obligations, MPCA required the Companies to “commit to implement the remedy selected by MPCA after following the process set forth in this Agreement.” The Companies consented to that language in the Agreement. However, still suspicious of the staff’s prejudices, they also reserved “any and all defenses they may have in law or equity to challenge the selected remedy on the grounds that the MPCA’s decision was arbitrary and capricious and/or contrary to applicable law.”

Remedy Design and Selection: The PRT in Practice

Exercising its data gap charge, the PRT recommended that the Companies undertake a host of studies to resolve the technical issues underlying the choice between dredging and capping. These studies addressed such subjects as the interaction between groundwater and surface water, the fate and management of DNAPL, the nature and dispersion of air emissions caused by dredging and the extent of root penetration of aquatic plants in aquatic wetlands. The studies dealt with a number of issues at the cutting edge of scientific knowledge about sediment remediation, cost several million dollars and took several years to complete. The results of the studies are described in a five-volume “Data Gap Report” with 25 technical appendices, which was completed by the Companies in late 2002. *See* www.serviceenv.com/slridt/documents.htm. The information acquired by the studies was instrumental in producing a solution to the remediation controversy.

This result was due in great part to the process by which the PRT reviewed the new information. Rather than immediately producing written reports for submission to the individual PRT members with relevant expertise, the Companies first presented their study results to the entire PRT and to the MPCA staff in periodic meetings. These face-to-face discussions, which usually extended over several days, produced important benefits. They allowed the individual PRT members, each of whom had had broad experience with numerous other contaminated sediment sites, to comment on all matters at issue and not just on those relating to the areas of expertise for which they were chosen. More importantly, the extended meetings allowed the PRT members to interact and collaborate among themselves, ultimately producing a PRT that more often than not acted as a cohesive whole, rather than as a collection of expert individuals. During these meetings, the PRT proved quite willing to challenge the assumptions and conclusions of both the MPCA staff and the Companies, whose relationship to each other also changed as a result of the interactions. Discussing technical questions in the light of new information and in the presence of eight independent experts, the staff

and the Companies, while never entirely abandoning an adversarial relationship, became far more collaborative and focused on problem solving. The staff withdrew its position that capping would not prove effective or protective, the Companies conceded that a number of the staff's concerns had merit and the two parties ultimately achieved consensus on most of the technical issues that had previously divided them.

The collaborative nature of the extended meetings with the PRT also emboldened the PRT members to move beyond their initial charge. They began serving as active mediators, rather than passive experts, and a number of PRT members began to suggest, and indeed to design, a "hybrid" remedy for the site that would involve both dredging and capping. Partially as a result of these suggestions from PRT members, MPCA and the Companies then took the equally unusual step of augmenting the public participation requirements of the NCP by convening a two-day stakeholder meeting to discuss possible new remedies.

A second reason for convening a stakeholder meeting was that previously unvoiced ecological concerns had begun to develop into issues as important as the engineering concerns that had initially led to the formation of the PRT. MPCA informed the PRT that even though capping might be a technologically sound solution, the Minnesota Department of Natural Resources (DNR), with the support of other stakeholders concerned with natural resources, opposed capping on ecological grounds. (Note that the DNR opposition was particularly significant because MERLA has no counterpart to the CERCLA provision exempting responsible parties from the need to obtain permits for on-site remedial action, so the Companies at the SLRIDT site would need to obtain a permit from DNR to undertake any remediation work in public waters, such as Stryker Bay). Capping Stryker Bay, MPCA informed the PRT, would irrevocably degrade the unique habitat functions of that "shallow sheltered bay" by rendering it too shallow, even if it were transformed into a wetland. According to MPCA, it was imperative that the bay's existing bathymetry be maintained. A cynic might have viewed the agency's recently discovered ecological concerns as merely a new rationale for insisting on dredging now

that its earlier engineering concerns had been resolved or discredited by outside expertise. However, the PRT deferred to the ecological objections of MPCA and DNR, because its members included no ecological experts.

The first stakeholder meeting was convened after the Companies had completed the Data Gap Report and the parties had achieved consensus on most of the previously identified technical issues. MPCA and the Companies invited the PRT and 55 stakeholders to a two-day brainstorming session to be directed by a trained facilitator. The stakeholders included EPA; DNR; other federal, tribal and regional entities concerned with protecting natural resources; the state of Wisconsin; the city of Duluth; representatives of harbor and navigational interests; the current site owner; neighbors who resided both on Stryker Bay and north of the site; and a local brownfields developer interested in transforming a capped site into a residential complex and marina.

The session began as many mediation sessions do – with each stakeholder describing its "interests" rather than its positions. For example, the Companies described their interest in cost certainty as well as cost-effectiveness and MPCA described its interest in permanence and protectiveness. Among their interests, the natural resource agencies listed specific water depths and adequate connections between Stryker Bay and the St. Louis River, and the Stryker Bay residents listed continued boat access to the river. The participants were then briefed on the results of the data gap studies and on the current thinking of MPCA and the Companies with respect to major technical issues.

The entire group was then divided into three breakout groups, each composed of a representative range of stakeholders, as well as several PRT members, who served as both participants and resources. Each group was charged with designing three new remedial alternatives that would take the new information into account and also respond to the interests identified earlier in the session. The results were remarkable. Stakeholders who had previously been allied with either the dredging or the capping camps together produced an array of hybrid remedies that involved

both dredging and capping. To a great extent, the issue had changed from “Shall we dredge or cap?” to “Where on the site is it appropriate to dredge and where is it appropriate to cap?”

Many of the stakeholder-designed remedies incorporated a number of innovative approaches, including a capping technology – “surcharging” – that had been suggested earlier in the session by a PRT member. Surcharging is a method of capping that involves the placement of excess capping material on the sediments. The weight of the excess material compresses the underlying sediments. After a few years, when the sediments have been sufficiently compressed, the excess capping material is removed, and the water depth is restored to its original level while leaving an adequate cap over the contaminated sediments. In designing their remedies, the stakeholders generally viewed surcharging as way of obtaining the benefits of capping (in appropriate areas), while simultaneously meeting the interest of the natural resource agencies in retaining the existing bathymetry of Stryker Bay.

On the basis of the interests identified and the ideas generated at the stakeholder meeting, MPCA and the Companies, joined now by DNR, entered into several months of detailed and intensive negotiations. These negotiations produced a hybrid remedy containing both dredging and capping (with surcharging) components. After this new alternative met with general approval at a second stakeholder meeting, the PRT Agreement was amended to substitute the new hybrid remedy for the staff’s original dredging remedy in the reopened feasibility study. The Companies prepared a new feasibility study incorporating the new remedy and submitted it to the PRT for review and comment. The PRT pronounced the new hybrid to be protective and technically sound.

In August 2004, the MPCA board, to general applause from an audience of stakeholders, adopted a ROD incorporating the hybrid alternative. *See* www.pca.state.mn.us/cleanup/sites/slridt.html. At the meeting, the MPCA staff, who may still have preferred a dredging remedy, nevertheless characterized the capping components of the remedy as a technology

that would work and be protective. The Companies, while reiterating their preference for the wetland cap remedy, nevertheless indicated they could support the hybrid remedy and would implement it. The PRT coordinator described her role in working with the PRT, MPCA and the Companies to fashion a compromise remedy for a complex site as one of the most rewarding experiences of her career.

Lessons and Conclusions

On the basis of their experience, the Companies might try to negotiate a somewhat different PRT Agreement if they were entering into negotiations today. First, they would probably try to impose time and dollar limits on the ability of the PRT to seek further information. The reopened study of alternatives that was expected to produce a ROD in two years in fact lasted four and a half years and absorbed nearly three years in data collection. Moreover, the studies that the PRT requested the Companies to undertake cost several million dollars, far more than originally anticipated. On the other hand, the extended remedy selection process also resulted in far more stakeholder involvement and acceptance than originally anticipated, and the cutting-edge data gap studies – whose multi-million dollar cost represents a relatively small portion of the total cost of the remedy and smaller portion still of the cost of the remedy originally proposed by MPCA staff – will probably save the Companies time and money in the remedial design and implementation stage.

Second, the Companies would probably try to better anticipate additional areas of expertise that should be included on the PRT. In this case, the PRT members used their engineering expertise to find technical solutions (like surcharging) to ecological objections but lacking ecological expertise themselves, they did not question the validity of those objections or submit them to scientific scrutiny. Had ecological experts been represented on the PRT, however, those objections would have been independently evaluated and the range of remedial actions potentially broadened.

Finally, the Companies, in negotiating a list of technical issues that need resolution, might now include on that list mixed questions of science and policy, such as

appropriate cleanup goals. In this case, the PRT was quite willing to comment on the appropriateness of applying different cleanup goals to capped areas and to dredged areas (they thought it unjustified), but they viewed the establishment of cleanup goals in the first instance as entirely within the purview of the regulatory agency. Yet, clearly there is a scientific component to cleanup goals that agencies should be prepared to explain and submit to the scrutiny of independent experts.

Despite these flaws, the experiment with peer review in this case should be counted an overall success. The key to resolving the long and acrimonious dispute over the appropriate remedy for contaminated sediments at the SLRIDT Site was submitting that dispute to a panel of independent experts with no predispositions or ulterior interests. By identifying the information needed to evaluate remedial alternatives and then meeting jointly with MPCA and the Companies to discuss that new information, the PRT forced both parties to make their best scientific and technical cases and served as a check on positions not well grounded in science. More importantly, the PRT helped to transform the dynamic of remedy selection from one of suspicion and confrontation to one of problem solving. Finally, by encouraging the parties to consider remedies other than those initially presented, the PRT helped the parties to embrace a more creative remedy selection process and, ultimately, to select a more innovative and broadly acceptable remedy.

The remediation process is not over at the SLRIDT Site. The Companies must still obtain a DNR permit and implement the remedy selected by the MPCA board. In the coming years of remediation, it is virtually certain that the Companies and MPCA will experience disagreements. But they continue to agree on one important principle: if they reach an impasse in the future on a technical issue, they will call up a PRT member and ask for advice.

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