EPA's Strategy for Determining the Role of Environmental Management Systems in Regulatory Programs

April 12, 2004

Acknowledgements

The EMS Permits and Regulations Workgroup, comprised of state and EPA staff, developed this Strategy. This Strategy would not have been possible without the contributions of the following workgroup members: George Wyeth, Chair (Office of Policy, Economics and Innovation); George Faison (Office of Solid Waste); James Horne (Office of Water); Ed Pinero and Robin Hirschorn (Office of the Federal Environmental Executive); Jim Nelson (Office of General Counsel); Jon Silberman (Office of Enforcement and Compliance Assurance); Gil Wood (Office of Air and Radiation); Martha Curran (EPA Region 1); Kristen Hall (EPA Region 2); Barbara D'Angelo and Chris Menen (EPA Region 3); Marilou Martin (EPA Region 5); Craig Weeks (EPA Region 6); Whitney Trulove-Cranor and Jack Hidinger (EPA Region 8); William Glasser (EPA Region 10); Jill Cooper (Colorado Department of Public Health and the Environment); Harry Gregori (Virginia Department of Environmental Quality); Al Innes (Minnesota Pollution Control Agency); Mark McDermid (Wisconsin Department of Natural Resources); John Cross (Office of Policy, Economics and Innovation); Bill Hanson (Office of Policy, Economics and Innovation); Shana Harbour (Office of Policy, Economics and Innovation); Suganthi Simon (Office of Policy, Economics and Innovation); and Beth Termini (Office of Policy, Economics and Innovation).

The Workgroup received input and managerial support from EPA's Office Directors' Policy Council on EMSs; chaired by Chuck Kent in the Office of Policy, Economics and Innovation; and EPA's Innovation Action Council (IAC) Subgroup on EMSs.

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Introduction

Environmental Management Systems (EMSs) are being adopted by a rapidly growing number of organizations in the United States. The U.S. Environmental Protection Agency (EPA or Agency) has determined that properly designed and implemented EMSs can help promote positive environmental outcomes. EPA's May 2002 *Position Statement on EMSs* (*EMS Position Statement*) (http://www.epa.gov/ems/policy/position.htm) articulates the Agency's policy on EMSs. It encourages the widespread use of EMSs across a range of organizations and settings, with particular emphasis on adoption of EMSs to achieve improved environmental performance and compliance, pollution prevention through source reduction, and continual improvement.

> "In recent years organizations have increasingly adopted formal Environmental Management Systems (EMSs). The most common framework for an EMS is Plan-Do-Check-Act, with the goal of continual improvement. EMSs provide organizations of all types with a structured approach for managing environmental and regulatory responsibilities to improve overall environmental performance, including areas not subject to regulation, such as resource conservation and energy efficiency. EMSs can also help organizations better integrate the full scope of environmental considerations and get better results, by establishing a continuous process of checking to make sure environmental goals are met. EMS implementation ensures that procedures are in place for taking remedial action if problems occur. From a business perspective, they can often help make organizations more efficient and more competitive and help address other important issues, such as security at key facilities. EMSs do not replace the need for regulatory and enforcement programs, but they can complement them. EMSs can indicate opportunities for EPA to streamline regulations and can be considered in compliance assistance, monitoring, and enforcement. First adopted by manufacturing industries, EMSs are now being used throughout the private sector, and increasingly, by public agencies of many different types."
>
> -*EMS Position Statement*

Although EMSs cannot guarantee any specific level of performance, the EPA believes that, when properly implemented, EMSs can help facilities achieve significantly improved environmental results and other positive benefits. For the past several years, pursuant to the *EMS Position Statement*, EPA has been involved in a wide range of activities designed to facilitate EMS adoption, including those based on ISO 14001 and other models. EPA promotes the widespread adoption of EMSs through a variety of voluntary programs, undertakes cooperative efforts with Canada and Mexico, researches and evaluates the effectiveness of EMSs in various settings, and integrates EMSs into the Agency's programs (e.g., enforcement settlement agreements).

This document is EPA's strategy for addressing the question of whether—and if so, how—it may also be appropriate to consider EMSs in the context of the Federal regulatory structure, either to improve the design of regulatory programs, to encourage the use of EMSs, or both. EPA wishes to make clear that it has no intention of mandating the use of EMSs in rules and permits. Rather, the aim of this Strategy is to determine whether there could be benefits from providing options within the regulatory structure for organizations that choose to adopt an EMS. In addition, this Strategy does not signal any intent on the part of the Agency to modify its existing policy of promoting the widespread use of EMSs on a voluntary basis.

What is an EMS?

An EMS is a practical tool that provides a systematic approach to environmental management, based on a Plan-Do-Check-Act cycle. An EMS is a set of management processes and procedures

that allows an organization to integrate environmental considerations into daily decisions and practices. This tool includes processes for developing and continuously improving an organization's environmental policy and goals under all media, and reducing negative environmental impacts, regulated and unregulated.

What are we trying to achieve in this Strategy?
In exploring potential linkages between EMSs and regulatory programs, EPA is interested in examining potential opportunities to improve the effectiveness and efficiencies of the regulatory system to:

- Obtain improved environmental results;
- Improve regulatory compliance;
- Promote pollution prevention;
- Use the resources of both regulators and regulated organizations more effectively; and
- Improve community and stakeholder understanding and input into the regulatory decision process.

How does this Strategy relate to EPA's other EMS programs?
EPA is having substantial success working with interested parties on implementing EMSs in a wide range of situations. These efforts have taken place primarily in voluntary programs. For example, EPA has had success in developing EMS Sector templates, piloting and evaluating EMS use with various organizations, incorporating EMSs into leadership recognition programs, and implementing EMSs at EPA's own facilities. A few of the voluntary programs in which EPA is incorporating EMSs include: National Environmental Performance Track, Office of Water's EMS program for Local Government, Design for the Environment, and the Sector Strategies Program. EPA expects to continue promoting EMSs, and Regions and program offices will continue to implement (and will likely expand) these and many other voluntary programs. Voluntary programs will remain the primary way in which the Agency promotes and encourages the use of EMSs.

Why are we doing this now?
EPA and states are interested in whether there are potential benefits to be gained from incorporating EMS options into the permitting and regulatory structure. States are already linking rule development and permitting to EMS. The Agency has been increasingly confronting questions of whether EMSs can be used to improve the efficiency and effectiveness of regulatory tools and what roles, if any, regulatory tools should play in promoting EMSs. Continuing research and experimentation by EPA and its regulatory partners[1] will assist in determining the effectiveness of EMSs in the regulatory structure and will ensure that EMSs remain a voluntary choice made by organizations that can lead to improved environmental performance.

[1] "Regulatory partners" refers to states, tribes and territories. States, Tribes, and Territories are all potential partners in this strategy. In many instances, they will be responsible for the permits and regulatory actions affected by the strategy.

EPA's current perspective

EPA will continue to promote the widespread adoption of EMS, while exploring the potential value of linking EMSs to regulatory structures—either in terms of improving the regulatory structure, encouraging EMSs, or both. EPA is interested in exploring the use of EMSs as an alternative within the regulatory structure through careful experimentation. The experimentation will be grounded in a defined set of policy ideas and questions to test, and will assure a high standard of health and environmental protection. Previous experiences and current understanding of EMSs reveal certain fundamental tensions that suggest the need for such experimentation before EPA can consider program changes. Participation in informed experimentation will provide EPA and its regulatory partners with greater understanding and more complete information on the potential benefits and drawbacks of incorporating EMSs into the regulatory structure.

EPA has no intention of mandating the use of EMSs in rules and or permits. Rather, by looking at the possible consideration of EMSs within regulatory structures, EPA is hoping to determine whether drafting rules or permits to provide organizations that choose to adopt EMSs with regulatory alternatives, options, or benefits may lead to more effective and efficient regulations. EPA will continue to explore the future of EMS efforts within voluntary programs and will expand this exploration to determine how and if these efforts should extend into the regulatory arena.

Roadmap to the Strategy

This Strategy is intended to give regulatory agencies, regulated entities, and non-governmental organizations (NGOs) insight on how we might employ EMSs in the regulatory structure. EPA will continue to use voluntary programs as the primary mechanism of promoting the widespread adoption of EMS.

The Principles are in the first section of the Strategy. The Principles expand upon the basic values EPA holds regarding EMS, which are set forth in the EPA's *EMS Position Statement* (http://www.epa.gov/EMS). Regulators and the regulated community should consider these Principles in designing and evaluating EMS programs. The next section of the Strategy is the Policy Ideas to Test. This section sets forth the policy areas in which EPA would like to experiment with EMSs in the regulatory context. Regulators, regulated entities, and non-governmental organizations (NGOs) can use this section to propose projects to experiment in these and other areas. Examples for each of the policy ideas and additional questions that should be addressed for each policy idea are presented in **Appendix 1**. The Agency will not limit its consideration of ideas to test to the ones listed in this section. In addition, **Appendix 2** contains design considerations, which EPA and other regulators should use to design and evaluate EMS projects.

The last section of this Strategy is the Action Plan. This section outlines the actions EPA will undertake to implement this Strategy.

Principles to Guide Actions and Decisions

EPA believes that the following principles will be useful to policy makers considering the use of EMSs in a regulatory context.

1. An EMS should make "business sense."

- An EMS is most effective when the organization actively embraces it and views it as making business sense and furthering important organizational goals.
- Organizations need to be able to design their EMS to fit their own needs and circumstances; the EMS should have room to evolve over time.

Implementation considerations:

- Imposing detailed specifications for EMSs in the regulatory context will limit the creativity and flexibility inherent in the EMS.
- The size and complexity of the EMS should match the size and complexity of the organization and its environmental issues.
- Permits and rules should be sufficiently specific to ensure robust, transparent, auditable EMSs and be sufficiently flexible to allow organizations to adapt their EMSs to fit their individual needs and circumstances.

2. Regulators should focus on performance.

- Properly designed EMSs promote positive environmental results, but do not guarantee performance or compliance.

Implementation considerations:

- EMSs generally should not be used to replace performance standards defined by regulatory programs, but can be useful tools for organizations to use to achieve such standards.
- EMSs include procedures for setting self-selected performance goals and identifying applicable legal requirements, but do not guarantee that the requirements and goals will be achieved.
- If EMSs are written into regulations or permits, it is important to distinguish between (1) enforceable performance standards, which are regulatory violations if not met; and (2) EMS elements which are not enforceable, but are conditions for receiving regulatory benefits.

3. Organizations should measure and report results.

- Performance under an EMS should be measured and shared with stakeholders in a salient, understandable manner and on a regular basis.
- Public support is likely to be greatest when EMSs provide for performance measurement, public input, and transparency.

Implementation considerations:

- EMSs can serve as a vehicle for periodically reporting to the public essential information about facility performance.
- Where EMSs generate more useful and timely performance information than required by regulation, EPA should consider whether the new information can substitute for currently required reports.

4. EMSs use a comprehensive, multimedia approach that considers all environmental impacts, regulated and unregulated.

- An EMS can enable an organization to effectively address unregulated environmental impacts and regulatory requirements.
- EPA and states cannot mandate that EMSs address unregulated impacts, but should not inadvertently design rule or permit terms that discourage an organization from doing so.

Implementation considerations:

- EMSs can be used to identify the full range of significant environmental impacts at a facility, which may help to design the best overall regulatory response.
- While rule writers should be cautious about incorporating EMSs, which are multi-media by nature, into media-specific regulations, EMSs may offer integrated approaches to environmental problem solving where single media approaches fall short.
- A narrowly focused environmental problem may be addressed through a Plan-Do-Check-Act continual improvement approach, which, while not an EMS, may be a step towards EMS adoption.

5. EMS-related incentives should be proportional to improved environmental performance.

- Incentives should be proportional to environmental performance and reward results over process.

Implementation considerations:

- Regulators should consider encouraging facilities to achieve and exceed desired performance goals through appropriate EMS-related incentives.
- In general, incentives that remove barriers to superior performance raise the fewest concerns.

EMS Policy Ideas to Test

The purpose of this Strategy is to learn more about whether incorporating EMSs into the regulatory structure can achieve the following benefits:

- Improved environmental performance;
- Improved regulatory compliance;
- Greater efficiency to regulators and the regulated community; and
- Improved public involvement.

To do so, EPA will engage its regulatory partners and other interested parties in conducting policy experiments. If these projects show a relative advantage over the traditional system, they could potentially help regulators to improve permitting and rulemaking functions. The projects may also highlight unintended or negative impacts from incorporating EMSs into the regulatory structure (e.g., impacts on small businesses).

The questions below are some of the policy ideas that EPA and states are most interested in testing. This list is not exclusive; other ideas are likely to emerge over time as EPA and the states work together on this issue. EPA encourages states and others to identify further opportunities in this area. For each of the general policy ideas, examples of potential experiments are listed in **Appendix 1.** The examples include the key questions and issues that such projects would present. A citation to a project, situation, or report with similar concepts follows each example.

1. **Can EMSs, in tandem with performance standards, achieve better and more efficient regulatory/permitting environmental results than prescriptive operational controls?**

2. **Can the multimedia analysis that is the hallmark of an EMS support cross-media tradeoffs to achieve higher overall environmental performance and pollution prevention?**

3. **Under what conditions could regulators rely on EMSs in permits and rules to redirect regulatory oversight from lower to higher priority areas?**

4. **Can EMS elements improve performance and efficiency by substituting for overlapping administrative and information-gathering requirements in rules and permits?**

5. **Does incorporating an EMS into a permit yield better public involvement procedures and environmental results than traditional permit models?**

6. **Can regulated facilities use their EMSs to enhance the environmental performance of third parties such as suppliers, customers, or environmental quality trading partners?**

In developing EMS-based policy experiments, it will be important to consider the following design issues:

- Selecting appropriate partners;
- Ensuring high-quality EMSs;
- Setting goals;
- Measuring and evaluating performance;
- Linking permits with EMSs;
- Involving the public; and
- Ensuring a high standard of health and environmental protection.

Appendix 2 discusses each of these fundamental issues in more detail.

Action Plan for EMS Experimentation

Objective 1: Outreach and Communications

Activities:

- Engage regulatory partners and other interested parties on the Strategy; and
- Host stakeholder workshops in regions and states.

Objective 2: Implement EMS Projects

Activities:

- Publicize intent to experiment on an ongoing basis;
- Maintain ongoing dialogue and planning through EPA/State EMS Workgroup;
- Solicit proposals from regulatory partners and others;
- Review and act on proposals through;
    i. State Innovation Grant program; and
    ii. EPA/ECOS Innovation Agreement Process.

Objective 3: Evaluate EMS Projects

Activities:

- Create an evaluation strategy to ensure that EPA and its partners capture environmental data, outcomes, and lessons learned:
    i. Establish performance metrics;
    ii. Plan for evaluation before the experiment begins;
    iii. Establish system for collecting and maintaining data;
    iv. Plan for sharing data collected by EPA and states; and
    v. Plan for third-party evaluation, where possible.

- Establish process for experimentation closure and mainstreaming of experiments:
    i. Review of projects that have been evaluated for possible mainstreaming.

Key Milestones:

- Conduct stakeholder workshops (Spring-Summer 2004);
- Solicit and accept project proposals (FY 2004/2005);
- Draft Evaluation Strategy for EPA-state review (Spring 2004);
- Review programs and report back to the Innovation Action Council (annually from implementation);
- Evaluation of the Strategy projects (one-three years after implementation); and
- IAC decisions on whether to mainstream successful ideas (after formal evaluation of each project is complete).

Appendix 1—Policy Ideas with Examples and Questions

This Appendix represents an "implementer's guide" to the policy experiments. For each of the policy ideas listed in the Strategy, it identifies some specific examples of possible projects, along with questions and issues specific to that policy idea. The examples are provided to illustrate potential applications of the general ideas, as many of them are already being implemented, but are not necessarily an endorsement of such applications.

1. Can EMSs, in tandem with performance standards, achieve better and more efficient regulatory/permitting environmental results than prescriptive operational controls?

Example 1: A RCRA permittee and its regulatory authority want to work together to identify opportunities to replace prescriptive operational controls in the permit with results-oriented performance standards. A potential example of one such requirement is the specification, in the permit, for a minimum of ten feet of aisle space in all circumstances. The permittee proposes replacing this requirement with a performance standard defining adequate aisle space as the space necessary to ensure emergency procedures can be implemented, with the facility using its EMS to develop appropriate emergency preparedness and response procedures. For similar concepts, see EPA's Permit Improvement Team website: http://www.epa.gov/epaoswer/hazwaste/permit/pit.htm.

Example 2: A facility subject to CWA Best Management Practices (BMPs) proposes replacing some of the BMPs (e.g., operating procedures and associated monitoring) with targeted, facility-specific effluent improvement projects and with numeric effluent limitations that correspond to the improvements in effluent quality expected from those projects. By replacing the generic BMPs with the projects and permit limits, the facility believes it can reduce its discharges of several key pollutants significantly. The facility proposes using its EMS to work collaboratively with stakeholders to identify and implement effective projects and measure and report on their performance. Alternative facility-specific operating controls developed by the facility to replace the BMPs will be incorporated into the EMS. For similar concepts, see EPA's International Paper-Androscoggin Project XL summary: http://www.epa.gov/projectxl/inter2/index.htm

Example 3: A city-owned POTW manages the Industrial Pretreatment Program for its indirect dischargers (IDs). The permits issued by the POTW to the IDs include concentration-based limits for metals and associated monitoring and recordkeeping requirements. The POTW proposes using its EMS to design and implement a program to reduce pollutant loadings by, among other things, helping the industrial dischargers to develop their own EMSs with integrated P2 activities. Resources for these activities will come, in part, from savings realized by allowing the POTW to streamline the indirect dischargers' permits and reduce direct oversight of historically compliant dischargers. The success of the project will be measured by the overall reductions in metal loadings from the POTW's outfalls. For similar concepts, see EPA's City of Albuquerque Project XL summary: http://www.epa.gov/projectxl/alb/index.htm

Questions to be addressed:

- Under what conditions could EMSs allow movement from detailed management standards or practices to simpler performance standards?
- How would permittees and regulators demonstrate and measure performance under streamlined permits that include EMSs?
- Can information generated by a facility's EMS's aspects/impacts analysis help in designing a performance-based permit?

2. Can the multimedia analysis that is the hallmark of an EMS support cross-media tradeoffs to achieve higher overall environmental performance and pollution prevention?

Example 1: A facility located in an arid western state is required to install Best Available Control Technology (BACT) on its stacks. The standard BACT in most areas of the country is a wet scrubber. The facility conducts an aspect/impact analysis under its EMS. The analysis identifies water use/pollution as among its most significant environmental impacts. It proposes setting an ambitious water use reduction target, with corresponding operational controls, premised on substituting slightly less efficient catalytic converters for the wet scrubbers to minimize water usage. The facility submits a permit application and prepares a BACT analysis in accordance with applicable CAA regulations. For similar concepts, see Colorado Department of Public Health and the Environment's Innovative Permit Pilot Project Proposal to EPA—EMS Permit Pilot Project: http://www.epa.gov/innovation/stategrants/sig2002.htm

Example 2: A facility subject to the Miscellaneous Organic NESHAPS (MON) proposes installing air pollution controls on its most significant production unit ahead of schedule, reusing or recycling methanol, and reducing sludge generation. It will also develop an EMS and use it to help identify and implement other projects to reduce additional waste streams. In return, the facility seeks to defer the application of RCRA Subpart CC rules to one of its hazardous waste surface impoundments and revisit the application of CAA Subpart YYY rules to the potential new waste reduction projects. Calculations suggest that the facility's air emissions and waste generation could be cut significantly relative to the expected emissions/waste levels that would occur if the facility implements the steps it has identified, as opposed to complying with the otherwise applicable rules. For similar concepts, see EPA's Crompton Corporation's Project XL summary: http://www.epa.gov/projectxl/crompton/index.htm

Questions to be addressed:

- Can EMSs cross-media aspects/impacts analysis, target-setting, controls, and measurement processes support superior performing, more flexible, cross-media permits?
- How can the information generated by an EMS be used to support tradeoffs between single media performance standards/technology based requirements in order to achieve the highest level of overall environmental performance?
- What flexibility do we have under statutes and regulations to allow multimedia pollutant tradeoffs based on comprehensive analyses and the need to achieve higher environmental performance?

3. Under what conditions could regulators rely on EMSs in permits and rules to redirect regulatory oversight from lower to higher priority areas?

Example 1: A facility agrees to develop and implement an enhanced EMS that includes accredited, independent third party auditing of both its conformance with the EMS standard and compliance with selected CAA monitoring and recordkeeping requirements. Audit report summaries, to include the permittee's response to any EMS or CAA deficiencies, will be prepared, submitted to the state, and made available to the public on the Internet. The regulator will be able to observe audits and/or obtain the underlying records and notes upon request. The regulator retains its authority to investigate noncompliance at any time, but will typically inspect only under conditions of potential imminent and substantial endangerment, spills, irresolvable complaints, or continuing noncompliance with CAA emissions limits or recordkeeping requirements. Unreported EMS deficiencies discovered independently by the regulator that are not CAA deficiencies will be treated not as permit violations, but as a factor in determining the success and future of the project. For similar concepts, see MPCA IBM Air Emission Permit No. 1090000-006 (January 2003).

Example 2: A facility with a strong compliance record agrees to adopt an EMS. The agreement is embodied in a permit provision. The permit allows the facility to make certain operational changes and provide notice to the permitting agency simultaneously, rather than submitting those changes for approval and waiting for the agency to act. The permittee assumes the risk that the agency might find that the changes do not conform to regulatory requirements, but based on its EMS and compliance history, the agency concludes that this risk is very small. For similar concepts, see MPCA IBM Air Emission Permit No. 1090000-006 (January 2003).

Example 3: Administrative requirements for implementing certain categories of permit modifications under RCRA might be streamlined for facilities with EMSs. The purpose of such a program would be to ensure that permit modification procedures do not pose a barrier to implementing environmentally beneficial changes to a facility driven by an EMS. If the EMS included significant public communication terms, these might provide an adequate substitute for standard notice procedures. For similar concepts, see EPA's Permit Improvement Team website: http://www.epa.gov/epaoswer/hazwaste/permit/pit.htm.

Example 4: A facility in a sector characterized by rapidly changing markets anticipates needing, over the next several years, to make multiple modifications to expand or improve operations and equipment. Normally, such modifications would be approved through permits to construct and/or modifications to the source's existing permit to operate. The facility proposes instead to use its EMS to develop a series of alternative operating scenarios and incorporate them into its Title V operating permit to allow it to make anticipated changes without the need for project-by-project approvals. Actual environmental improvements will be promoted though lower-than-required alternative VOC emission caps and voluntary pollution control equipment upgrades tracked via state-of-the-art continuous emissions monitoring. For similar concepts, see Imation Corporation's Project XL summary: http://www.epa.gov/projectxl/imation/index.htm

Questions to be addressed:

- Under what conditions can permits with EMSs enable regulators to reprioritize and redirect regulatory oversight from low priority areas (e.g., minor air permit modifications at minor sources) to higher priority areas?
- What are the characteristics of a competent and reliable third party auditor?
- What are the similarities/differences in qualifications, competence, scope, and performance results between government inspectors/inspections and private sector EMS auditors/audits?
- What is a "strong" audit—what information does a regulatory agency need from an EMS conformance audit?
- What are the conditions under which EMS audit and management review can provide for reduced compliance oversight?
- What incentives can regulators build into their programs to prompt facilities to hire the best possible third-party auditors to conduct the best possible audits (e.g., for self-disclosure through a third party audit)?
- How should regulators respond if the flexible permit conditions fail to yield the desired results?

4. Can EMS elements improve performance and efficiency by substituting for overlapping administrative and information-gathering requirements in rules and permits?

Example 1: A Maximum Achievable Control Technology (MACT) standard requires a facility to conduct an expensive stack test whenever it changes the composition of its fuels. The facility would like to add agriculturally-generated "biofuels" to its fuel mix, but doing stack tests each time would be costly. In return for a CAA variance of the testing provisions providing the facility with increased flexibility to mix in such biofuels, the permit would be amended to allow for biofuel substitution with applicable volume limits. The facility would conduct an initial stack test to establish an emission factor for evaluating compliance and then use its EMS to develop corresponding operational controls to ensure compliance with emission and volume limits. For similar concepts, see Colorado Department of Public Health and the Environment's Innovative Permit Pilot Project Proposal to EPA—EMS Permit Pilot Project: http://www.epa.gov/innovation/stategrants/sig2002.htm

Example 2: A facility, with state and local support, proposes to use its EMS to develop a facility-wide comprehensive operating plan to consolidate multiple Federal, state and local environmental permits into a single manual for the facility. The facility's goals include eliminating repeated, multiple permit applications to save the company time and money, and reduce its cost of capital by addressing lender concerns about future operational status. To ensure environmental benefits, the facility is willing to reinvest a percentage of its cost savings into voluntary new equipment to reduce air emissions below compliance levels and replace toxic lubricants with environmentally-friendly materials. Reduced water use and solid waste generation are identified as aspirations. For similar concepts, see Berry Corporation's Project XL summary: http://www.epa.gov/projectxl/berry/index.htm.

Questions to be addressed:

- What common permit provisions lend themselves to being satisfied by an EMS or some combination of its elements?
- If EMS terms substitute for permit terms, to what extent would they be enforceable, and how?
- If EMS terms are not enforceable, how would accountability be ensured?
    - Instead of "substituting" for permit requirements, should EMS terms be used as a model for drafting requirements within a permit that fit better with the permittee's operating systems?

5. Does incorporating an EMS into a permit yield better public involvement procedures and environmental results than traditional permit models?

Example 1: A facility with an established EMS decides it wants to engage external stakeholders to both maximize the EMS's value to external parties and improve environmental performance. The facility identifies a mix of stakeholders and engages them in identifying aspects and impacts, determining impact significance, and selecting targets and objectives with maximum results and value to the community. An interesting experiment in this case could be to compare the targets self-selected by the facility to ones chosen with stakeholder involvement and analyze the actual environmental results achieved in each case to determine whether and how the stakeholder involvement adds value to the process.

Example 2: An Army base has a CAA permit for its boilers. It also has a RCRA permit for hazardous treatment and waste storage associated with fleet maintenance and munitions disposal. Within the past several years, new subdivision development in the area has exacerbated community-base tensions, prompting calls for limiting or even eliminating certain training exercises at the base. The subdivision residents are concerned with noise, smoke, and hazardous waste management issues. The base proposes reaching out to community stakeholders, in the context of its EMS, by using the EMS to improve how it communicates with local residents. It will also use its EMS to address its neighbors' concerns by minimizing its generation of hazardous wastes and setting parameters under which the Army can continue training and other mission-related activities with support of the community. For similar concepts, see Environmental Management Systems Guidebook (U.S. Air Force Center for Environmental Excellence; March 1998), e.g., "Sample Community Advisory Board Rules of Operation." http://www.afcee.brooks.af.mil/eq/ecamp/EMSguide.doc.

Questions to be addressed:

- Does involving stakeholders, through the EMS, in the development and implementation of permits provide for better coordinated and more timely public involvement?
- Can enhanced public involvement through an EMS generate improved environmental performance and, if so, what requirements are needed to achieve and measure the results?
- Under what conditions could public involvement through EMSs meet the letter and spirit of required statutory and regulatory permit provisions?

- Does expanding community involvement in site-specific decisions through an EMS lead a facility to better identify aspects and impacts, select and measure targets, and comply and perform?
- How can promoting public involvement in EMSs be balanced with preserving the business case for EMSs (e.g., by respecting confidentiality and decision making needs)?
- How would outreach ensure no high and adverse disproportionate impacts on any group?

6. Can regulated facilities use their EMSs to enhance the environmental performance of third parties, such as suppliers, customers, or environmental quality trading partners?

Example 1. A meat processing facility seeks to increase its production levels, which are capped by the permit. The facility agrees that its production increase is conditioned on its continued compliance with the technology-based and water quality-based limitations contained in its permit. The facility proposes to the state permitting authority that the increase be authorized pursuant to an agreement, to be incorporated as a special permit condition, that the facility adopt an EMS with P2 and beyond-compliance goals (e.g., reduced groundwater usage) and be certified, within two years, by an independent and accredited registrar acceptable to the state. The facility will also develop, in consultation with the state, a model EMS program for its suppliers (third-party pork producers) and encourage them to participate in the model program. For similar concepts, see the NPDES permit issued by North Carolina to the Tar Heel meat processing facility owned and operated by Smithfield foods: *http://h2o.enr.state.nc.us/admin/pubinfo/newsrelease/Text2002/SmithPermRel11-15.pdf*

Example 2. A permitting authority is considering whether it is more appropriate for a facility to be covered under a general NPDES permit or an individual (facility-specific) permit. There are a number of unique environmental management and discharge issues associated with the facility. The facility proposes that the authority grant coverage under a NPDES general permit based on its implementation of a model EMS, to be developed in conjunction with the authority, covering facility operations and the activities of key suppliers. The EMS will provide for adoption of appropriate best management practices for key facility operations and be certified by an independent third party acceptable to the permitting authority. The facility volunteers also to share information with the community on the performance of its EMS and its progress in meeting its performance goals. For similar concepts, see United Egg Producers Project XL summary: *http://www.epa.gov/projectxl/uep/index.htm*

Example 3: A water quality-trading program for nitrogen is underway for the Lower Example River. While the trading protocol does not expressly reference EMSs, a permittee experienced at using its own EMS to identify water quality improvement opportunities sees opportunities to encourage non-point sources to adopt their own EMSs as a means of generating new trading credits of potential value to nitrogen dischargers, like itself. Because the local non-point sources are generally unfamiliar with EMSs and have limited resources, the permittee proposes partnering with state and local authorities to provide the non-point sources with EMS design and implementation support and technical assistance. Information gathered through these activities

could be considered in the context of potential future modifications to either or both of the trading protocol and/or NPDES permits limits. For similar concepts, see the Lower Boise River Effluent Trading Demonstration Project website: http://www.deq.state.id.us/water/tmdls/lowerboise_effluent/lowerboiseriver_effluent.htm.

Questions to be Addressed:

- Can EMSs help support the generation and tracking of credits in air and water quality trading programs?
- How can EMSs be employed, in rules and permits, to promote voluntary EMS development and improved environmental results from third parties, including suppliers and customers?
- How can EMSs help regulators determine the net environmental and public health impact(s) from trading programs?

Appendix 2—Design Considerations

The questions below present design considerations to address fundamental issues likely to arise when experimenting with EMSs in rules or permits. In developing EMS-based projects, it will be necessary to consider how to:

- Select appropriate partners;
- Ensure high-quality EMSs;
- Set goals;
- Measure and evaluating performance;
- Link permits with EMSs;
- Involve the public; and
- Analyze and respond to project results.

Therefore, in designing projects, EPA and the states should consider these factors carefully.

If a project does not achieve its intended goals or is terminated by a regulator or participant, it may become necessary to reinstate deferred permit or rule requirements. Mechanisms for accomplishing this should be identified in the design phase of the project to ensure a fair and orderly return to compliance with standard requirements.

***Ensuring High-Quality EMSs*:**

1. What EMS models are appropriate in regulatory applications? Is an ISO 14001 EMS appropriate? Should any enhancements be required (e.g., Performance Track Program)?
2. What is the legal implementing mechanism for the project? What standard permit conditions or regulatory requirements, if any, will require modification?
3. When and how should facility characteristics or screening criteria (e.g., compliance history; facilities in top performer programs) be used to select good facility partners for the experiment?
4. How will regulators determine—prior to and throughout the project—that the facility is continuing to maintain its EMS? Who will audit EMS conformance (e.g., regulators, third-parties, etc)?

***Goal Setting, Performance Measurement, and Evaluation*:**

1. What are the project's environmental, administrative, and effectiveness goals?
2. How will progress be measured—have performance measures been established to track the goals?
3. Are there baseline measures to use to compare the project's performance to performance under the current regulatory structure?
4. Who will be responsible for verifying environmental performance and reporting results?
5. How often and to whom will results be reported?
6. Who will analyze and report on the results? To EPA and the public?

***Linking Permits and EMSs*:**

1. Will permits refer to EMS elements or include terms that the EMS elements can satisfy?
2. What EMS and permit-related documents/work products will be needed for the project to proceed, and who will develop them?
3. Are any EMS-related permit terms intended as enforceable commitments, conditions for eligibility for benefits/alternative requirements, or voluntary goals?
4. How will compliance with key permit terms be monitored and verified?
5. How will the facility return to standard permit terms should it become necessary to do so?
6. What are the resource implications to regulators and facilities of substituting EMS terms for permit provisions?

***Public Involvement*:**

1. Will the public participate in developing and implementing the EMS? The permit?
2. Will EMS-related performance and compliance information be made publicly available, and if so, when, by whom, and in what format?