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An Analysis of Performancebased Systems for Encouraging Innovative Environmental Technologies (POL-1)

EXECUTIVE SUMMARY

The Interstate Technology and Regulatory Cooperation (ITRC) Work Group established a Policy Work Team in 1996. Among other tasks, the Team was asked to document and evaluate whether a promising new trend in environmental regulation--performance based contracting and regulatory systems--was encouraging development and deployment of innovative technologies.

In August 1996, the Team surveyed the ITRC member states to identify promising case studies. The Team selected eight case studies -- two state-lead regulatory initiatives, two site management service activities and four federal site remediation or waste processing projects. Team members collected background documents, visited case study locations, and interviewed state, federal, and citizen stakeholders and innovative technology vendors. The major interview themes included: defining the performance-based system, identifying the roles of the key parties engaged in the system, and evaluating whether the system could lead to better, cheaper cleanups and greater use of innovative technologies or methods to achieve those cleanups.

Since many of the activities reviewed were at an early stage of development or implementation, it was too early to comment on their ultimate individual performance. Nevertheless, the team was able to reach a number of important findings and conclusions relevant to Performance-Based Systems (PBS) in general and relevant to their impact on technology innovation in particular. The full report describes the specifics of each case study and presents all of the findings and conclusions.

For those interested in implementing performance-based systems or in promoting innovative technology, the issues catalogued in the discussion of findings and conclusions can serve as a checklist of topics that must be addressed programmatically to successfully implement PBS and promote innovative technology.

The team could not come up with one single definition of performance-based systems. However, the working definition developed and used by the team to survey ITRC states is broad enough to cover the general characteristics of these systems. The team defined performance-based systems as follows:

> *In a broad context, performance-based approaches to regulation and contracting are those that establish performance criteria that must be met or exceeded in lieu of defining the specific technical path toward reaching a goal. Performance-based approaches avoid*

mandating how the cleanup is to be performed, giving the regulated entity the flexibility to prescribe an approach to achieving results-oriented criteria.

Such approaches can be further characterized as more cooperative and flexible ways to deal with environmental cleanup, that invite innovation and include dialogue and cooperative efforts among state and federal regulators, private industry, publics, and local and tribal governments. An example of performance-based regulation is self-certification of compliance in lieu of permitting.

It is the significant benefits of these general characteristics that make performance-based systems worthwhile. Without exception, case study participants showed a willingness to try a new approach and learn from the experience.

Performance-based systems, while necessary to allow the use of innovative technologies, are not by themselves sufficient to encourage the development and deployment of innovative technologies. In fact, if not designed and implemented properly as complete systems (with supporting programs), PBS approaches sometimes create or reinforce barriers to innovation.

Performance-based contracts and regulations must be designed and implemented as part of a flexible, comprehensive program including early and continuous collaboration with stakeholders, common and clear goal setting, incentives for innovation and use of innovative technologies, and a willingness to make changes together as the project proceeds.

Implementing performance-based systems can encourage a culture shift where all parties begin to act as collaborators and problem-solvers, seeking and accepting innovative approaches. This evolution must be nurtured to have a successful program.

Contracting or regulatory agency resources needed to design and implement these performance based systems are often more expensive, at least initially, than traditional systems and may require implementing agencies to emphasize different skill sets. Accountability and reporting requirements for contractors or regulated entities are often more extensive and expensive than under traditional "command and control" structures -- but the net long-term benefit of the greater flexibility PBS allows should be better environmental results at lower costs.

Performance-based systems allow innovations but additional program incentives must be provided to encourage use of innovative technology. Desirable incentives include separate government led programs to remove barriers and promote the use of innovative technologies, financial rewards or regulatory relief such as enforcement discretion criteria and flexible Records of Decisions (ROD).

Additional case studies on performance-based systems including contracts and regulations could help practitioners better define the total system changes required to develop the appropriate PBS structure, including risk allocation and incentives for innovation.

Better information and data sharing among stakeholders on innovative technology development and performance is needed; federal agencies should be encouraged to invest a portion of their demonstration funding into ensuring that the results will be acceptable to a wide-range of regulatory agencies who may be

asked to approve future deployment of successfully demonstrated technologies.