

**REPORT OF
THE ADMINISTRATOR'S
TASK FORCE ON
TECHNOLOGY TRANSFER
AND TRAINING**

FINAL REPORT

U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

DECEMBER 2, 1987

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 2, 1987

OFFICE OF
REGIONAL OPERATIONS

MEMORANDUM

SUBJECT: Final Report of Administrator's Task Force on
Technology Transfer and Training

FROM: Robert S. Cahill, Chairperson *Rob Cahill*
Administrator's Task Force on Technology
Transfer and Training

TO: The Administrator

On behalf of the members of your Task Force on Technology Transfer and Training, I am pleased to transmit to you our final report.

The Task Force was comprised of 19 senior level managers, representing regional, field and headquarters EPA offices, and, significantly, States and local governments too (please see inside back cover for list of principal contributors to this report). The Task Force formally met four times since it was formed last March. I have been uniformly impressed with the level of commitment, time and energy Task Force members invested in this effort throughout the process. Jack Stanton, who served as full-time Executive Director to the Task Force, deserves special mention for his outstanding and tireless support of the Task Force.

The conclusions and recommendations presented in this report reflect a solid consensus of the Task Force members. The people involved in this effort are convinced that technology transfer and training will play a major role in EPA's future activities and its relations with States, local governments, industry and universities.

cc: Deputy Administrator
Task Force Members



Regional Center for Environmental Information
US EPA Region III
1650 Arch St.
Philadelphia, PA 19103

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EXECUTIVE SUMMARY

INTRODUCTION

As the environmental programs of the 1980s develop and mature, it becomes increasingly clear that more of the work in environmental protection will be carried out in the field by the EPA Regional Offices and State and local government agencies. In addition, the Clean Air Act, RCRA, CERCLA, Safe Drinking Water Act, and Clean Water Act all mandate more involvement by State and local government in implementing the statutes. In response to these trends, the EPA Administrator established a Task Force on Technology Transfer and Training. This Task Force was charged with exploring how EPA can most effectively leverage its people, knowledge, and resources in support of Regional, State and local efforts to improve overall environmental performance in the field.

CONCLUSIONS

The Task Force believes that three overall barriers impede technology transfer and training efforts at EPA, and that changes in these three areas are crucial to the success of future efforts:

- **Institutional Climate.** While the Administrator and some top managers within EPA recognize the importance of technology transfer, this message has not been accepted throughout the Agency. As a result, technology transfer and training are not perceived as high priorities by other Agency managers and staff; this mindset must be addressed.
- **Organizational structure.** Agencywide, EPA is not presently organized to encourage or deliver technology transfer and training effectively. Improving the institutional capability to be responsive to identified needs will require development of an appropriate organizational network.
- **State/EPA relationship.** EPA needs to create a clearer vision of its role with respect to delegation and oversight of environmental programs to ensure that technology transfer and training receive appropriate emphasis. A practice of genuine partnership based on parity with the States will enhance both EPA's and the States' abilities to respond to the growing environmental challenge. EPA and States must also address and encourage the development of local government capacity in environmental management.

Overall, EPA should place more emphasis on technology transfer and training as an integral part of the regulatory process.

RECOMMENDATIONS

An abbreviated summary of the recommendations contained in the full report follows:

Incentives for creating a positive institutional climate:

- Demonstrate Administrator's and Deputy Administrator's support.

- Promote cooperative technology transfer activities with industry and universities.
- Provide incentives and awards.
- Increase the visibility of technology transfer and training activities.
- Build momentum through a large number of independently developed small actions.
- Encourage inclusion of technology transfer and training mandates in new and reauthorized legislation.

Organizational Structure

- Create an Office of Technology Transfer.
- Establish an individual focal point within each AAship.
- Establish Regional focal points to coordinate needs assessment, training, and technology transfer in each Region.
- Encourage the establishment of State-level technology transfer and training contacts as counterparts to EPA focal points.

EPA-State relationships:

- Support regional consortia of States to provide technology transfer and training functions under State direction.
- Reorient and improve existing channels of State/EPA communication.
- Involve States as partners in all components of program design and implementation.
- Encourage personnel exchanges among EPA Headquarters, laboratories, Regional Offices, and States.
- Promote a joint State/EPA senior management summit.

Implementation issues:

- Needs Assessment
 - Increase attention in Regional reviews/audits of State environmental programs and grants on technology transfer and training solutions to compliance problems.
 - Increase attention in Headquarters reviews of Regional Offices on training and technology transfer needs.
 - Require that all proposals to delegate regulatory or enforcement functions to States or local governments include an assessment of technology transfer and training requirements.

- **Delivery Mechanisms**

- Stimulate use of a wider variety of delivery mechanisms to meet specific needs.
- Require developers of technology transfer and training programs to consult directly with users.
- Create "brokers" or catalysts for technology transfer and training activities.
- Coordinate with the EPA Institute.

- **Evaluation and Feedback**

- Reconvene the Task Force to assess progress.
- Develop and disseminate model evaluative approaches.
- Document successes.

REPORT OF THE ADMINISTRATOR'S TASK FORCE ON TECHNOLOGY TRANSFER AND TRAINING

I. INTRODUCTION

The evolution of environmental programs has changed the climate and conditions under which EPA operates, challenging the Agency to adapt to these new conditions and expand its role to meet new needs. As the environmental programs of the 1980s develop and mature, more of the work in environmental protection is being carried out in the field by the EPA Regional Offices and State and local government agencies. In addition, the Clean Air Act, RCRA, CERCLA, Safe Drinking Water Act, and Clean Water Act all mandate more involvement by State and local governments in implementing the statutes. This evolution has a significant impact on EPA's approach to carrying out its mission, prompting it to extend its role beyond its traditional focus on enforcement and regulation to a renewed emphasis on technology transfer and training as means of accomplishing environmental protection goals. As EPA moves into this new and expanded role, the Agency has a unique opportunity to redefine and forge new relationships with States, local governments, industry, and academia that are based on partnership and cooperation.

Recognizing this evolution, in March 1987 Administrator Thomas created a Task Force on Technology Transfer and Training to give him recommendations and options on how EPA could more effectively leverage its people, knowledge, and resources to meet this challenge. The Administrator's charge to the Task Force was to focus on methods for improving overall performance in the field through technology transfer and training, and to consider the development of a systematic process with three core elements: needs assessment, delivery mechanisms, and feedback.

During its review, the Task Force learned that: (1) EPA now provides considerable technology transfer and training to State and local agencies; (2) State and local recipients value these services and want them expanded; and (3) there appear to be a number of very feasible and affordable opportunities to improve EPA technology transfer and training in the short term. In addition, the Task Force became convinced that in order to carry out the Administrator's challenge, technology transfer must be broadly defined to incorporate all forms of two way communication that lead to enhanced environmental management in the field. To this end, the Task Force believes that the principal conclusions of its review are:

EPA, working in partnership with the States, must take action to legitimize the importance and integral nature of technology transfer and training to its mission. As the Agency continues to evolve and mature, technology transfer and training must become core elements in supporting the Agency's operations and interactions with the states and local government, industry, and academia.

Further, the Task Force believes that failure to incorporate such an emphasis throughout the Agency will undermine the effectiveness of the Agency's regulatory and enforcement efforts, and related activities at the State and local level.

Compliance with environmental regulations can be more readily accomplished if monitoring and enforcement activities are combined with a program of technical assistance and training. Further, many areas of environmental concern, such as the radon and nonpoint source water pollution problems, do not lend themselves to the traditional regulatory and enforcement approach; in these cases, technology transfer and training can provide a mechanism for the development of positive solutions that draw on the unique strengths of all parties involved.

The Task Force is not alone in its view that technology transfer and training will be crucial components of EPA's future role. Congress emphasized the importance of technology transfer by unanimously passing the Technology Transfer Act of 1986. This incentive-oriented law was further buttressed by Executive Order 12591, which encourages cooperative consortia among government, academia, and industry for the development and commercialization of new technology.

State and local governments also perceive the value of technology transfer activities to their communities and local economies. They recognize that a healthy environment makes a major contribution to the quality of life in a community. It also affects a community's ability to promote itself, attract industry, and grow. EPA assistance that enables communities to achieve environmental goals more cost-effectively is clearly beneficial.

The Task Force met four times to consider ways in which technology transfer and training could enhance the effectiveness of environmental protection activities at all levels. The group focused its attention on technology transfer and training activities related to EPA Regional Offices, States, and local agencies. As this process proceeded, it became clear that creating a more effective partnership between EPA and the States was a central underlying issue with important bearing on the group's deliberations.

Implementation of the Task Force's recommendations will provide a much-needed framework to:

- establish technology transfer and training as legitimate core elements of the Agency's approach to accomplishing its mission; and
- enhance the importance of cooperative partnerships among governments, industry, and academia.

II. CONCLUSIONS

The Task Force concluded that in order to better fulfill its mission, EPA needs to adopt a more incentive-structured approach that integrates technology transfer and training into all Agency activities. To succeed, three overall barriers need to be overcome:

- **Institutional climate.** While the Administrator and some top managers within EPA recognize the importance of technology transfer and training, this message has not been accepted throughout the Agency. As a result, technology transfer and training are not perceived as high priorities by other Agency managers and staff; this mindset must be addressed.
- **Organizational structure.** Agencywide, EPA is not presently organized to encourage or deliver technology transfer and training effectively. Improving the institutional capability to be responsive to identified needs will require development of an appropriate organizational network.
- **State/EPA relationship.** EPA needs to create a clearer vision of its role with respect to delegation and oversight of environmental programs. A practice of genuine partnership based on parity with the States will enhance both EPA's and the States' abilities to respond to growing environmental challenges.

The Task Force stressed that specific actions aimed at increasing technology transfer and training opportunities will have only limited success unless these fundamental institutional issues are addressed. It is encouraging to note that some States recognize the favorable impact current attention is already having on technology transfer and training. However, it is important to understand that sustaining these efforts requires fundamental changes in EPA policy and State/EPA relations. Other Task Force conclusions are:

- State and local recipients generally give high marks to present EPA technology transfer and training efforts, but would like to see them expanded and more carefully tailored to State and local needs.
- Technology transfer and training have lacked line management support throughout the Agency when it comes to work plans, resources, and budgets. There is a strong perception that technology transfer and training initiatives are unable to compete with legislative mandates and SPMS commitments. There is also a hesitation to make ongoing efforts highly visible because of fear that they will be reduced if not totally eliminated in the budget process.
- Most Agency technology transfer and training activities are tied to EPA national program objectives and schedules; they do not necessarily reflect State interests and priorities. Despite increased activity in recent years, EPA invests relatively little in technology transfer and training specifically designed to enhance State capacity to define and carry out an environmental agenda that is broader than EPA categorical programs.
- An increasingly important component of technology transfer and training is the development of cooperative relationships between Federal, State and local governments, industry, and academic institutions. The new Technology Transfer Act of 1986 and Executive Order 12591 provide incentives for strengthening and expanding these ties. There is also growing recognition that successful problem-solving is a two-way street, with no single party having all of the answers or expertise.
- Environmental problems are global in nature; therefore EPA should take greater advantage of international agreements to promote and benefit from international technology transfer. This could be accomplished by making technology transfer a part of each international agreement negotiated by the Agency.
- Agency program planning does not place adequate emphasis on the development of information dissemination mechanisms to support the implementation of environmental programs. Sometimes regulations are issued without first ensuring that government at all levels, as well as the regulated community, have the requisite capacity to effectively implement them.

It should be emphasized that the actions recommended in the sections that follow should not interfere with the technology transfer and training activities that are currently underway at EPA. The Agency conducts many excellent programs, and additional efforts should build upon and complement these programs, not replace them. The Task Force has identified a number of recommendations to weave these imperatives into the fabric of the Agency.

III. RECOMMENDATIONS

A. INCENTIVES FOR CREATING A POSITIVE INSTITUTIONAL CLIMATE

The Task Force recognizes that creating a positive institutional climate is a difficult undertaking and does not underestimate the effort that will be required. The current level of appreciation, understanding, and acceptance of the value of technology transfer and training in the Agency must be improved. The Task Force proposes the following steps to create a more positive climate for technology transfer and training.

Recommended Actions:

- **Demonstrate Administrator's and Deputy Administrator's support.** The Administrator and Deputy must clearly demonstrate their support for technology transfer and training activities. Communication of this support and frequent reminders of it will have a very positive influence on the attitudes and behavior of EPA managers and staff. Specific examples of steps that would demonstrate top management leadership and support include:
 - Issue a policy statement that affirms the importance of technology transfer and training to EPA's role and instructs all EPA staff to place more emphasis on these activities and be more responsive to requests for information and assistance. This policy statement should also stress the importance of involving the States and local governments as partners at all levels.
 - Indicate the extent to which tradeoffs between required performance quotas and technology transfer activities can be made, since in the absence of additional funding, technology transfer and training will take resources away from existing activities. This will require more managerial flexibility and a different approach to performance measurement than currently exists.
 - Include technology transfer and training as a topic to be raised and discussed as needed by the Administrator, Deputy Administrator and other senior Agency officials in all Option Selection Briefings and management reviews of major issues.
 - Leverage research capabilities and analyses of various regulatory approaches by expanding involvement into international technology transfer and training activities.
- **Promote cooperative technology transfer activities with industry and universities.** The Nation's universities and industries need to be included as partners with governmental organizations in technology transfer related to environmental protection. New approaches are needed that will promote cooperation and collaboration.
 - Identify issues where including industry or universities will have greatest payoff (e.g., waste minimization, accidental chemical releases) and develop action plans.
 - Develop more environmental awareness and sensitivity in industry during the development of new processes and products, by working more closely together.

- Support establishment of cooperative problem-solving projects such as the Superfund Innovative Technology Evaluation (SITE) Program with both industry and academic institutions.
- Focus attention on the Federal Technology Transfer Act of 1986 and the Executive Order 12591. The Administrator, or his designee, must provide leadership to implement these initiatives. Exploration of possible consortia initiatives among industry, academia, and government (EPA, State, local) should receive high priority.
- **Provide incentives and awards.** Incentives must be created within EPA that recognize and reward technology transfer and training as legitimate investments. Three examples are:
 - Establish an Administrator's Award for Excellence in technology transfer and training.
 - Set aside a technology transfer and training fund to encourage headquarters and field office initiatives. This should be a matching fund to help promote exemplary programs.
 - Provide for individual awards and incentives for helping States and local governments with special problems.
- **Increase the visibility of technology transfer and training activities.** While EPA's Program Offices, Regional Offices and laboratories provide a significant amount of technology transfer and training, many people within and outside EPA are not aware of these activities. Increasing awareness of the various activities EPA conducts will contribute to changing this perception. Specific steps that could be taken include:
 - Focus an entire issue of the EPA Journal on technology transfer and training activities within EPA, and follow up with regular articles on new activities.
 - Prepare and distribute a book of good practices and showcase projects.
 - Establish a central hotline to serve as an Agency-wide "pointer" system. This hotline would not replace other existing hotlines; instead, it would accurately direct callers to appropriate resources in the Agency. Every telephone book in the country, for example, could have a reference to "1-800-EPA-HELP."
- **Build momentum through a large number of small actions.** The Task Force recommends that significant improvement can be attained by building grass-roots ownership through many small actions. These actions could include:
 - Encourage intelligent risk-taking on small ventures, with managers communicating to staff that they would understand and accept some failures as new approaches to difficult problems are sought.
 - Support the establishment of regional forums, similar to Ground-Water and Engineering Forums, to work with ORD laboratories to identify critical field problems that need immediate technical support.
 - Recognize, reward, and encourage entrepreneurial technology transfer and training activities and share successful small actions among Agency managers.

- **Encourage inclusion of technology transfer and training mandates in new and reauthorized legislation.** The Office of External Affairs should draft language to explicitly require technology transfer and training in pending, new, or reauthorized legislation, such as CAA, TSCA, RCRA, and FIFRA.

B. ORGANIZATIONAL STRUCTURE

The Task Force believes that there is a subtle but genuine distinction between the cultural barrier discussed above and organizational/structural barriers to improving technology transfer and training. In addition to a climate that does not support technology transfer and training, management systems also create disincentives. An appreciation of the importance of technology transfer and training on the part of individuals must be supported by the creation of organizational structures and management systems that facilitate rather than hamper initiative and managerial risk taking.

There currently exists a great deal of individual knowledge and capability on technology transfer and training within Agency offices and divisions, but often their efforts are fragmented. In some cases, this has led to duplication of efforts or missed opportunities to leverage a contribution.

In order to design an organizational framework that would stimulate and support technology transfer and training, the Task Force considered several organizational alternatives. It was careful in its deliberations to avoid the creation of a new, overbearing bureaucracy that would require too many resources or centrally control all technology transfer and training activities. The Task Force felt it was important to preserve and strengthen the autonomy of existing programs and their sponsoring offices. A series of steps is recommended to create a technology transfer and training infrastructure as described below.

Recommended Actions:

- **Create an Office of Technology Transfer.** The Office should promote an entrepreneurial spirit among managers and staff, encouraging them to develop creative, cost-effective responses to technology transfer and training needs. This small office, approximately five or six people, would have three primary functions: (1) to serve as an advocate or "champion" for technology transfer and training; (2) to stimulate technology transfer and training activities; and (3) to provide assistance and broker expertise to Agency technology transfer and training efforts.

The Task Force recommends initially forming the Office on the Administrator's staff, within the Office of Regional Operations. A permanent location should be determined within three to six months based on the following criteria: (1) cross-program, multidisciplinary responsibilities; (2) a technical orientation and understanding, with some experience and expertise in technology transfer and training; and (3) credibility among all target audiences including Regions, States, and industry. It is the Task Force's intention that this office not become aligned with a line media program office and that the office be given prominent placement within the selected location.

- **Establish an individual focal point within each AAship.** The people assigned this responsibility should be senior staff who have credibility and influence. Their primary functions will be leadership and advocacy for technology transfer and training; stimulation, promotion, and coordination of activities; and compilation and communication of information on needs. Specifically, they should be

responsible for coordinating with the Regions, taking part in Regional Program Reviews, and reviewing program components of each Region's State review/audit. These reviews should be used as an opportunity for Regional, State and local needs to be communicated to Headquarters staff.

- **Establish Regional focal points to coordinate needs assessment, training, and technology transfer in each Region.** The Task Force recommends the establishment of a high level technology transfer and training role associated with an existing senior regional executive position. The Regions should be provided flexibility in determining position placement with the Regional organizations. However, the Task Force believes that to be most effective, the individuals selected to fill this visible role should:
 - report in this role to the RA/DRA;
 - have the capability of impacting cross-media technology transfer and training decisions;
 - act as the Regional focal point;
 - have direct access to staff support.

In addition, the Task Force strongly supports the expansion of the ORD Regional Outreach Programs to all 10 Regions.

- **Encourage the establishment of State-level technology transfer and training contacts as counterparts to EPA focal points.** The designation of a State senior environmental official as a focal point for technology transfer and training is an important aspect of the technology transfer network. This official should work closely with the Regional counterpart and other States to identify needs and develop Regionally based solutions. This individual should be the lead executive in the creation of the State consortia process.

C. STATE/EPA RELATIONSHIPS

Although not part of the initial charge to the Task Force, the issue of the relationship between the States and EPA was raised numerous times by members of the group. The EPA structure currently incorporates only one-half of the State/EPA partnership in technology transfer and training design and delivery. For technology transfer and training to be effective tools, a partnership role involving parity has to be forged for the States that is commensurate with their roles in implementing environmental protection programs. The new role should recognize that the function of technology transfer and training is a "two-way street" that requires exchanges of all types of information--not just technical and scientific--and improved communications at all levels between the States, local governments and EPA. Such a role should recognize the importance of interaction among States and localities as well as the need to collaborate with EPA.

While technology transfer and training is a positive step towards improving State/EPA relationships, Task Force members believe that the problems that exist in that area are actually symptoms of a much broader challenge. That challenge is articulating and providing for the evolving roles of the States and EPA, where EPA expands its existing role of regulation and enforcement to include technical support and assistance. The Task Force believes that this issue is in need of special attention by the Administrator if other technology transfer and training recommendations are to succeed.

Recommended Actions:

- **Support regional consortia of States to provide technology transfer and training functions under State direction.** EPA should actively support regional consortia of States, through grants or cooperative agreements, to provide training for State and local officials that is "closer to home." The new Office of Technology Transfer should review options and make recommendations concerning the Agency's provision of seed money, trainers, or expertise for training programs. Potential models for this program include the consortium in the northeast (Northeast Hazardous Waste Project [NEHWP]) and the proposed RCRA training program that would provide direct funding to the States (proposed for FY88).
- **Reorient and improve existing channels of State/EPA communication.** Regions should use opportunities such as State reviews/audits as an opportunity to identify technology transfer and training needs and reinforce the State/EPA partnership. Program reviews and audits should be conducted in a more positive and flexible manner, with an increased focus on problem-solving actions. The designated Regional contact should play a major role in ensuring that States' technology transfer and training needs are identified and addressed.
- **Involve States as partners in all components of program design and implementation.** To better meet the needs of the States, potential participants must be more fully involved in the development of the programs. This will ensure that the information to be presented is what is actually needed, that it is presented at the appropriate level of detail, that the mechanism used for presentation is most effective, and that appropriate feedback channels are in place.
- **Encourage personnel exchanges among EPA headquarters, laboratories, Regional Offices, and States.** Exchanges among various EPA and States' staff members should be strongly encouraged. Effective management processes should be established to facilitate the exchange. People to people exchanges and assistance are often considered the best method of technology transfer.
- **Promote a joint State/EPA senior management summit.** Considerations should be given to supporting a summit meeting of high level State and EPA management officials (similar to EPA's Senior Managers' Forum in Baltimore in February, 1987). A focus of discussion would be to refine and articulate respective future roles in an evolving State/EPA partnership and the evolving redefinition of environmental management responsibilities.

D. IMPLEMENTATION ISSUES

The Administrator charged the Task Force to assess and develop systematic processes for improving needs assessment methods, delivery mechanisms, and feedback for the Agency.

1. Needs Assessments

The current approach for needs identification at EPA relies primarily on informal communications between Headquarters, Regional, and State staffs. Most States concur that this approach works reasonably well; however, there is still the concern that States and local governments have little or no voice in how these needs are interpreted into actions. In addition, these informal methods do not always systematically bring needs to the attention of managers who should act on them.

Some States commented that their Region's performance reviews/audits were used to help determine technology transfer and training needs. The majority, however, viewed the reviews/audits as exercises in "bean counting" with most of EPA's attention focusing on State deficiencies. A key concern of States and local governments is that EPA Regions are more inclined to emphasize non-compliance than to work towards improved technological or training solutions over the longer term. Many States suggested that reviews/audits could provide an excellent opportunity to discuss technology transfer and training needs and that the State/EPA relationship would be enhanced by focusing more attention in performance reviews/audits on joint problem solving, including technology transfer and training solutions. This process should also facilitate the communication of these needs to higher levels within EPA and the States.

Headquarters reviews of Regional Offices would be improved by a similar broadening of focus to include formal discussion of technology transfer and training needs as a response to identified problems.

Recommended Actions:

- **Increase attention in Regional reviews/audits of State environmental programs and grants on technology transfer and training solutions to compliance problems.** The Office of Technology Transfer would be kept apprised through routine contacts of review/audit results that affect technology transfer and training. Technology transfer and training should be a formal item on the review agenda.
- **Increase attention in Headquarters reviews of Regional Offices on technology transfer and training needs.** Program reviews of Regional Offices should affirmatively address technology transfer and training issues at the Regional level, and plan longer-term technology transfer and training activities based on jointly perceived problems. Technology transfer and training should be a formal item on the review agenda.
- **Require that all proposals to delegate regulatory or enforcement functions to States or local governments include a comprehensive assessment of technology transfer and training requirements.** The proposals should also identify the extent to which the Agency will devote resources to provide assistance in meeting those requirements.

2. Delivery Mechanisms

There is a strong human tendency to rely upon the familiar; this proclivity often means that technology transfer and training activities are based upon more traditional methods such as seminars, workshops, manuals, or reports. It is important to explore other approaches that may be better suited for specific combinations of topic and audience.

State and local officials expressed a desire to be more directly involved in the planning and design of training programs so these programs will be more responsive to their needs.

Recommended Actions:

- **Stimulate use of a wider variety of delivery mechanisms to meet specific needs.** The new Office of Technology Transfer should conduct an assessment of non-traditional training approaches such as videoconferencing, videotapes and videodiscs, and computer-based instruction. The Office should then help develop

training programs or materials to introduce EPA staff to these approaches and to encourage them to supplement or replace more traditional training program designs.

- **Require developers of technology transfer and training programs to consult directly with users.** The new Office of Technology Transfer should suggest ways that designers of training programs could consult with users to ascertain their specific informational needs, existing skill levels, preferred training methods for the course under development, and constraints that would affect their ability to participate in the training.
- **Create "brokers" for technology transfer and training activities.** EPA should support pilot projects that are designed to facilitate peer-to-peer consultations among States and to broker technology transfer and training in which expertise existing in various States is identified and used as a resource by other States. Consideration should also be given to the development of a technology transfer "host" program that provides for effective peer-to-peer assistance.
- **Coordinate with the EPA Institute.** The new Office of Technology Transfer should work cooperatively with the EPA Institute. The Task Force recommends acceleration of the integration of the EPA Institute activities into the Regional structure.

3. Feedback

The primary objective of expanding technology transfer and training is to improve real environmental performance in the field. To this end, the Task Force believed it was important to design, early in the process, the mechanism for evaluation and feedback. This mechanism would allow midcourse corrections and sharing of success stories from one part of the organization to other parts.

Recommended Actions:

- **Reconvene the Task Force to assess progress.** The Administrator's Task Force should be reconvened within a year to review the implementation of the Administrator's initiatives in technology transfer and training, and to report back to the Administrator and Deputy on the Agency's progress and accomplishments.
- **Develop and disseminate model evaluative approaches.** The Office of Technology Transfer, working with OPPE, should develop model procedures and methods to be used in evaluating various types of programs and delivery mechanisms. The procedures should include approaches and sample instruments for measuring immediate feedback on satisfaction and increases in knowledge, and longer term assessment of the impact of the programs.
- **Document Successes.** The AAs should identify and document success stories of major technology transfer or training programs, with the goal of relating performance improvement to the activity. The Office of Technology Transfer should collect these case studies and publish a compendium of studies each year as a way of disseminating experience and methods. AAs should be permitted to defer their first case study until FY89 in order for them to adequately develop necessary baselines, training objectives, and instructional design.

IV. SUMMARY

The conclusions and recommendations contained in this report reflect a solid consensus of the Task Force members. One of the common threads that bears restatement here is that technology transfer and training activities could not, and should not, be separated from the broader mission of the Agency. As EPA takes steps to improve and expand its technology transfer and training efforts, it will be crucial for other Agency managers to reach a shared realization -- that technology transfer and training are integral to the way EPA will do business in the future.

The Task Force members also recognized that technology transfer is not an end in itself; neither is it a highly visible, quick reaction destined to capture management attention and public appreciation. Technology transfer and training activities are investments in the future, whose true value may not become fully realized in the short term. The members of the Task Force strongly urge their colleagues to heed the recommendations of their peers and take direct responsibility for ensuring that technology transfer and training are tightly woven into the fabric of their institutions and the daily performance of their jobs. It will take EPA, State, local government, industry and university resources working together to fully realize the potential contribution of technology transfer and training to improving environmental protection in the field in the environmental programs of the future.

ADMINISTRATOR'S TASK FORCE ON TECHNOLOGY TRANSFER AND TRAINING

A dual purpose of this document is to serve as a "technology transfer" piece itself. All of the people listed below provided valuable contributions to the Task Force effort and final report. We encourage you to contact any of us with any questions or comments concerning this report.

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