

SUMMARY FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE

System Planning Corporation Building
Rosslyn, Virginia
November 30, 1993

Introduction

Roundtable Chairman Dr. Walter W. Kovalick, Jr., Acting Deputy Assistant Administrator of EPA's Office of Solid Waste and Emergency Response (OSWER), opened the meeting and welcomed all participants. A complete list of participants and other attendees is included as an attachment (Attachment 1) to this summary. Roundtable agencies represented included:

- o U.S. Department of Defense (DOD)
- o U.S. Department of Energy (DOE);
- o U.S. Department of Interior (DOI), Bureau of Mines;
- o U.S. Department of Interior (DOI), U.S. Geological Survey (USGS);
- o U.S. Air Force (USAF);
- o U.S. Navy (USN);
- o U.S. Army (USA);
- o National Aeronautics and Space Administration (NASA); and
- o U.S. Environmental Protection Agency (EPA).

Dr. Kovalick noted that several important projects initiated by the Roundtable and its member agencies would be reviewed at this meeting. Following up on the last Roundtable meeting in June, an Ad Hoc Cost and Performance Working Group was established and convened two meetings to review various agency efforts to collect cost and performance data and discuss ways to coordinate data collection. Also, a DOD-wide effort to address the problem of vendors soliciting many different offices within the same agency will be reviewed. In addition, a representative of the Western Governors' Association will describe progress toward development of a mechanism for permit reciprocity among western States.

Collecting Cost and Performance Information, Project Update

John Kingscott, of EPA's Technology Innovation Office (TIO),

discussed the findings of the Ad Hoc Cost and Performance Working Group and presented a proposed framework for documenting cost and performance at federal cleanups. Ad Hoc Working Group meetings were held on October 26 and November 9. Working Group discussions covered three areas: ongoing federal agency efforts to collect cost and performance data; cost and performance data needs; and specific cost and performance elements that can be coordinated.

Mr. Kingscott briefly reviewed ongoing federal efforts to collect cost and performance data. Cost and performance data is being, or will be, collected from technology demonstrations being conducted by the Western Governors' Association, the Public/Private Partnerships program run by Clean Sites (through a grant from EPA/TIO), the Advanced Applied Technology Demonstration Facility (AATDF) run by Rice University (through a DOD grant), the Superfund Innovative Technology Evaluation (SITE) program, the underground storage tank demonstrations (through grants by EPA's Office of Underground Storage Tank to the Regions), the Bioventing Initiative (through Air Force funding at 100 full-scale sites), and DOE's Integrated Demonstration Program. Cost and performance data also are being collected by TIO at full-scale Superfund cleanups and by the Air Force at DOD sites through the Technology Application Analyses project. The latter project has already produced a report from the Umatilla Army Depot site and another 20 reports will be prepared by Oak Ridge National Laboratory and the USACE, Omaha District. Efforts to compile available information on cost and performance include Roundtable documentation of federal demonstrations, the Corps of Engineers' Historical Cost Analysis System (HCAS), the Army's Integrated Handbook and Lessons Learned system, and many other documents that summarize available technologies.

Mr. Kingscott then summarized the ideas raised by participants at the first Working Group meeting. Some of the statements included: the perception that the variety of separate activities creates confusion; some sort of centralized (not necessarily computerized) "system" is needed that includes the ability to easily search for desired information; the structure and format of any system should be focused on the needs of identified users with an appropriate level of detail; and the needs for generalized versus site-specific data should be balanced. Other issues included defining conditions that influence costs (for example whether costs represent the first use of a technology); how information will be collected and updated; who should peer review information in the system, and standardizing definitions of cost and performance terms. Working Group participants felt that the

primary audience for cost and performance data should be technical project managers needing information to support remedy selection. Typical components of a cost and performance report should include historical site use, site characteristics, description of the treatment system, performance of the treatment system, cost, lessons learned, and points of contact.

Mr. Kingscott presented a proposed strategy for initiating coordinated documentation of cost and performance data at federal cleanups (Attachment 2). Summaries of full-scale remediation projects should be completed using standardized terms, for example, for site identification, contaminant groups, media, treatment systems, and supplemental treatment systems. Minimum data sets should be defined and measurement procedures should be documented. USACE's Historical Cost Analysis System could be used to store cost information using the existing Work Breakdown Structure format. Mr. Kingscott presented a chart that could be used by field personnel to determine which data to collect to determine whether a particular technology would be feasible for remediating soils found at their sites. The soil characteristics presented in the chart (porosity, pH, clay content, moisture content, etc.) also could serve as a standard set of data to collect at site remediations. A second, similar type of chart showed design and operating parameters (residence time, throughput, temperature, etc.) that should be collected to fully evaluate the performance of innovative treatment systems.

Mr. Kingscott noted that both EPA and the Air Force have begun projects to collect cost and performance data at completed full-scale remediations. Based on experience gained through these projects at full-scale sites, the standardized collection of cost and performance data can be refined and expanded to standardized data collection for technology demonstrations and treatability studies. Mr. Kingscott recommended that the Working Group be reconvened in six months to review EPA and Air Force reports on cost and performance and look for further opportunities for coordination. Dr. Kovalick said that this meeting should be held before next Roundtable meeting; it occur before the end of April even if all reports are not completed. He added that other agencies are welcome to bring similar studies to the meeting for Working Group consideration. The goal is to make progress toward standardized data collection by Summer, 1994.

John Fringer, (U.S. Naval Facilities Engineering Service Center) raised the issue of who will be inputting the necessary data. Cary Jones (USACE) said that HCAS participants have agreed to enter

their data. Dr. Kovalick suggested that, in addition to the meeting in April, another Working Group meeting be held in February to discuss the issue of data handling.

Tom Anderson (DOE Office of Technology Development) said that DOE also has a project for assessing cost and performance data on cleanup technologies. Although DOE was not able to participate in the earlier Working Group meetings, he would like to coordinate with the Working Group on the development of a format so that the two efforts will be consistent. Dr. Kovalick welcomed the suggestion and noted that it would be helpful for DOE to bring some cost and performance data, for example from Savannah River, for consideration at the next Working Group meeting. Mr. Anderson agreed and noted that Krista Holland has been newly hired and will be a future contact for cost and performance information.

Mike Mastracci (EPA Office of Research and Development), said that DOE will be conducting a two-day Workshop on Performance and Cost Information Standards and Criteria for Communication Between Technology Developers and Users on January 18-19, 1994 (see Attachment 3). The meeting will focus on identifying information users, their information needs, and a strategy for meeting those needs. A questionnaire has been circulated that will help in the development of a strawman version of performance and cost information criteria and standards. DOE is being assisted in this effort by EPA's Risk Reduction Engineering Laboratory (RREL) and the National Environmental Technology Applications Corporation (through a cooperative agreement with EPA). Mr. Kingscott and Bob Furlong (U.S. Air Force) commented that their targeted users are field project managers who select remedial technologies, not the technology developers and remedial contractors who are important segments of DOE's targeted audience.

Use of Innovative Technologies at DOE

Tom Anderson described DOE's current approach to the development of technologies in support of contamination cleanups at DOE sites. DOE technology development is focused on five areas, referred to as "pods" in DOE: plume remediation, landfill containment, high-level storage tanks, decontamination and decommissioning, and mixed waste. DOE has taken a problem-oriented approach, developing methods for addressing the most immediate problems, including VOCs in the vadose zone and ground water, heavy metal contamination, DNAPLs, radionuclides in soil, and mixed waste plumes.

DOE has established "Focus Groups" for each of these areas to

bring together technology developers from DOE, other federal agencies, and industry; cleanup operations personnel; and other stakeholders to direct the development of technologies for site cleanups. The Focus Groups ensure that client office needs are supported, customers and stakeholders are involved, performance measures are established, and methods for commercialization are pursued. A DOE Executive Committee oversees the activities of the Focus Groups, including review of Focus Group strategies, recommendations, and cross-cutting issues. The Plume Remediation Focus Group, headed by Mr. Anderson, has prepared a strategy with four major strategic planning elements: developing in situ technologies for shallow contamination, deep contamination, and mixed wastes; increasing private capability to provide services to DOE and the nation; building stakeholder acceptance through public interaction and regulator participation; and integrating technology development within DOE and among federal agencies.

Mr. Anderson then briefly described a number of technologies being tested by DOE, including high pressure gas membrane separation for off-gas treatment; portable acoustic wave sensors (PAWS) that avoid drilling wells or taking samples; sonic drilling, which is faster and produces less waste than conventional methods; low temperature corona processes for treating organics; Dynamic Underground Stripping, which greatly increases yields from vacuum wells; In Situ Vitrification; an in situ bioremediation technique being tested at Savannah River that uses horizontal wells below the water table to inject air/nutrients into contaminated ground water and horizontal wells above the water table to extract air; the SEAMIST™ flexible liner for lining well holes; and the MAG*SEP in situ treatment wall process. Dr. Kovalick noted that in situ vitrification has been tested in over 400 treatability studies and asked about its full-scale status. Mr. Anderson replied that a system is on-site at Parsons and is due to be implemented at another site in March. In response to a question from Lou Kanaras (U.S. Army Environmental Center), Mr. Anderson said that plasma arc vitrification is still in the early research stage.

In the ensuing discussion, Steve Lingle, with EPA's Office of Research and Development (ORD), asked how much of their research addresses mixed wastes. Mr. Anderson said that about a quarter addresses mixed waste, but that TCE and other mobile contaminants are their first priority. David Rubenson (RAND) asked whether DOE is setting a national agenda or just DOE's agenda, and Mr. Anderson said it is a bit of both because helping the economy is a major component. Dr. Kovalick suggested that the Plume Remediation pod include a member from EPA's R.S. Kerr Environmental Research

Laboratory in Ada, Oklahoma, and Mr. Anderson said they are working towards that end. Mr. Lingle asked how technologies developed by the national laboratories are commercialized. Mr. Anderson said that DOE is pushing to go beyond developing a technology in the laboratory and then patenting it and letting it go. Industry is getting an increasing percentage, currently 30%, of DOE's research resources. Nick Lailas (EPA, Office of Radiation and Indoor Air) asked who will ultimately own technologies developed in collaboration with the private sector. Joe Paladino, DOE Office of Technology Integration, replied that if it is a small business, the small business will own the technology; if it is a larger business, it depends upon the patent situation.

Consolidating Remedial Technology Documents

Frank Freestone (EPA/ORD/RREL) presented a proposal by the DOD Environmental Technology Transfer Committee (ETTC) to combine a number of federal remediation technology documents into a single, easy-to-use compendium to assist site cleanup managers and supporting contractors in selecting remedial technologies. He noted that the Army, Air Force, Navy, DOE, and EPA each have similar remediation needs and publish similar documents. However, the existing documents are not consistent in content, format, or references, and along with other available information, take a long time to review.

To provide a clearer road map through all of the available information, the compendium would be developed in a three-tiered format. Tier 1 would be a screening matrix to direct users to appropriate technology options. The existing Air Force/EPA Remediation Technologies Screening Matrix and Reference Guide would be modified so the matrix could be used to match site contaminants and media with a list of primary and possible remediation technologies. Presumptive remedy concepts would be included to link problems and alternative solutions. Tier 2 would be a series of consolidated, two-page technology descriptions containing key information on technology applications and operation. The two-page technology profiles would provide a common format for existing information in the Screening Matrix, Federal Remediation Technology Roundtable Synopses, SITE Profiles, Army Installation Restoration Handbook, DOE Technology Catalog, and other sources. Agency agreement on the two-pagers would be sought. Tier 3 of the compendium would consist of lists of references for each technology, such as bulletins, analyses, handbooks, and other articles, to which users can refer for additional information,

Mr. Freestone said the compendium would focus on site characterization and remediation technologies, and avoid pollution prevention, restoration, and other such topics. It would include near-term implementable technologies (with some emerging technologies) but will not be limited to innovative technologies. Funds for preparation of the document are being provided by the Air Force and the work will be done through an Army contract managed by Ed Engbert (U.S. Army Environmental Center). The time frame is relatively short; plans are to kickoff the project in January, have a draft completed in June, and print it in August. Mr. Freestone requested that the Roundtable provide its support for the compendium by providing input on document's format, reviewing the document in April when it will be 25% complete, putting the document and key references on ATTIC, and publishing the final document under the Roundtable's cover.

In a relatively lengthy discussion following Mr. Freestone's presentation, Dr. Kovalick said the concept was well thought out. He felt that charting a path through available resources would be very helpful. However, he expressed concern about being able to develop information on the many available site characterization technologies in the short time frame scheduled. Also, the information on site characterization technologies may not be peer reviewed as was done for remedial technologies in the EPA/Air Force Screening Matrix. Dr. Kovalick suggested that the community acceptance-type columns in the screening matrix be eliminated because they are very dependent on judgement calls and may bias users away from emerging and less frequently used technologies. Mr. Engbert said that the ETTC would like to eventually create similar documents for remedial, site characterization, pollution prevention, and restoration technologies. He added that their development may eventually be taken over by the Roundtable. Ted Zagrobelny (U.S. Naval Facilities Engineering Command) commented that laying out presumptive remedies may bias readers from considering alternative approaches. Mr. Freestone agreed that it can be a trap against innovative technologies, but the screening matrix can be used to guide readers through available information to narrow down the list of technologies for further consideration. After further discussion, the Roundtable agreed to remove the community acceptance-type columns from the screening guide and to give its support to development of a publication on remediation technologies. It will not include site characterization technologies at this time.

DOE Environmental Restoration and Waste Management Technology
Development Cost Analysis

Mac Lankford (DOE, Office of Demonstration, Testing, and Evaluation) gave a brief presentation on DOE's cost analysis initiatives, including baseline field site surveys, technology cost analyses, and window of opportunity analysis. The purpose of baseline field site surveys is to quantify the extent of contamination problems. It is an on-going activity in DOE. Examples of completed documents include the Technology Needs Assessment Final Report, published in August, 1991, and the Mixed Waste Inventory Report, published in April, 1993.

The Environmental Technology Cost-savings Analysis Project (ETCAP), run by a team at Los Alamos National Laboratory, is intended to quickly provide information on technology costs needed for technology transfer, technology screening, and decision support. Studies have been completed and disseminated on a number of technologies, including the direct sampling ion trap mass spectrometer, Hanford cone penetrometer, in situ vitrification, SEAMISTTM, in situ air stripping, conventional pump and treat, and preliminary advanced oxidation processes. Studies are under review or submitted for publication on the towed array magnetometer, cleanable HEPA filters, and field screening for VOCs. Work is in progress on biofilters, sonic drilling, in situ bioremediation, off-gas technologies, and radiofrequency heating of soils. In addition, a summary cost-effectiveness document, consisting of two-pagers on each analysis, will be published in another month or two. Mr. Lankford noted that a wide range of technologies will be analyzed, with many yet to be completed.

DOE's Window of Opportunity Analysis is intended to determine the time frame available for significantly affecting the cost of remedial actions. For example, DOE conducted an analysis of VOCs in arid soils that showed the largest number of RODs for these sites will be signed during 1994-1995. Expenditures for cleaning these sites are estimated to drop rapidly during the 1997 time frame. Any technology advances made after that time will have a significantly lower impact on remedial costs than advances made prior to that time. The methodology for conducting these analyses is to identify regulatory milestones (when RODs are expected to be signed), determine the size of the contamination problems, estimate the cost of remedial actions using the CORA Model, and then identify the window of opportunity. The problem of VOCs in arid soils is fairly well understood, however, not all problems are as well known. Window of opportunity analyses have been completed for VOCs in arid soils, VOCs in non-arid soils, uranium in soils, plutonium in soils, buried waste, and underground storage tanks.

Update on Remediation Technologies Development Forum Activities

Steve Lingle (EPA/ORD) briefed the Roundtable on the activities of the Remediation Technologies Development Forum (RTDF). The RTDF was established by EPA in 1992 after industry representatives met with the Administrator to identify ways of pooling public and private efforts to solve remediation problems. The RTDF has grown into a consortium of partners from chemical, petroleum, and pharmaceutical companies, various manufacturers, federal agencies, national laboratories, research centers and institutions, and universities who share the common goal of developing more effective, less costly hazardous waste characterization and treatment technologies. The RTDF is forging public-private partnerships through which knowledge, experience, equipment, and facilities can be shared for conducting laboratory and field research on mutual remediation problems.

The RTDF has established four action teams to identify issues, define research needs, ensure that research is sound, enlist partners, and facilitate wider acceptance of innovative technologies: 1) the Integrated In Situ Soil Remediation Technology Work Group focuses on electroosmosis and installation of treatment zones using hydrofracturing and other technologies; 2) the Bioremediation of Chlorinated Solvents Work Group focuses on natural attenuation, accelerated bioremediation, and bioventing; 3) the In Situ Flushing Work Group focuses on surfactant-enhanced removal of contaminants; and 4) the Site Characterization Work Group focuses on developing cost-effective characterization and monitoring techniques. EPA provides funding to support RTDF meetings and action team workshops, including facilitation of activities by Clean Sites, through the public-private-partnership grant from TIO. Resources for action team research activities are provided by participating agencies.

Mr. Lingle noted that the first two work groups have made the most progress, and that the integrated in situ group has applied to DOE for funding. Mr. Rubenson asked whether the industries involved feel that this work is part of their core business. Donna Kuroda (USACE) replied that the companies are looking to develop technologies for their own contamination problems, which is similar to DOE's approach.

Federal Network for Focusing Unsolicited Vendors

Lou Kanaras (U.S. Army Environmental Center) presented a proposed mechanism for using the DOD Environmental Technology Transfer

Committee (ETTC) as a focal point for screening private sector technologies. Currently, vendors are soliciting as many different offices as they can, often within the same agency, to market their technologies. This process is inefficient, reactive rather than proactive, not cost effective, and personnel intensive. The proposed alternative includes the preparation of a hard-copy guide to communicate government technology needs in the areas of conservation, compliance, pollution prevention, and restoration. The hard-copy guide would describe the mission of involved agencies and laboratories and include points of contact and information needed by DOD to evaluate the usefulness of a technology to DOD problems.

A second part of the proposal would be the creation of a process for testing technologies to evaluate cost and performance claims made by the vendors. Vendors would submit proposals to have their technologies tested and share the costs on a 50-50 basis with the testing agency. Proposals would be submitted to ETTC and agency points of contact listed in the hard-copy guide. In their proposals, vendors would specify their technology's level of development (operated by full-scale, field demonstrated, ready for field demonstration, or additional work required), estimates of implementation costs, performance claims that the technology will be evaluated against, and residuals requiring further treatment. The ETTC would publish an annual report with the results of all testing.

The new process for screening private sector technologies would be explained in the hard-copy guide and advertized in a video, trade journals, and poster displays at various symposiums and conferences. The new process would improve communication with the private sector, reduce personnel hours, increase inter-service coordination, and increase effective use of private sector technologies. Mr. Kanaras said that a final draft plan is due to be completed by February 1 and is open for comment and change.

In the discussion that followed Mr. Kanaras' presentation, a number of participants commented that the technology testing program sounded like a duplication of EPA's SITE program and concerns were raised about who would fund and staff the program. Col. Jim Owendoff (U.S. Air Force) said that if a technology already has been through the SITE program, it would not be tested. The idea is to provide a less rigorous alternative to the SITE program for evaluating vendor claims. He noted that DOD probably does not have the personnel to do rigorous analyses, but points of contact should be supplied to vendors. Mr. Engbert added that

vendors also should be informed of, and be prepared to discuss, the hard technical questions that DOD will be asking. After further discussion, Mr. Kanaras agreed to pare down the proposal to eliminate the testing program and retain the hard-copy guide, advertising posters, and maybe a video. Mr. Lingle commented that two areas not in the SITE program that could be supported are funding of demonstrations for developers that cannot afford to bring their technologies to the field and further, full-scale testing of technologies that may have passed through SITE.

U.S. EPA Environmental Technology Initiative

Meg Kelly, Acting Director of EPA's Technology Innovative Office, described the activities of EPA's Innovative Technology Council (ITC) and the status of EPA's Environmental Technology Initiative (ETI). The ITC is a senior-level advisory group that was created in June, 1992. It is developing an EPA-wide Innovative Technology Strategy and conducting strategic planning for the ETI. The goal of the Innovative Technology Strategy is to increase the development, commercialization, and use of innovative environmental technologies by fostering cooperation between the public and private sectors. A basic premise of the strategy is that a healthy environment and a healthy economy are not mutually exclusive. The ITC is studying ways to reduce marketplace barriers to the use of innovative technologies, modify regulations to reduce barriers and create incentives (such as providing a place to demonstrate technologies), and promote diffusion of information.

The EPA Environmental Technology Initiative was outlined in the State of Union message on February 17, 1993. Its purpose is to develop more advanced treatment technologies that can yield environmental benefits and increase technology exports. The ETI will be funded at \$36 million in FY94, \$80 million in FY95, and a total of \$1.8 billion over nine years. EPA will pass 50 to 75% of these resources to other federal agencies so that a link can be made with scientists and engineers in other agencies and the private sector who can address identified technical needs. Development of approaches for commercialization and diffusion are a critical element of the initiative. Areas that have been identified for funding in the FY94 program include:

- o Clean Technologies for Small Businesses: an outreach program to assist small business achieve regulatory compliance and competitiveness through pollution prevention. Resources will be used to assist small and mid-sized businesses identify pollution prevention opportunities.

- o U.S. Technology for International Environmental Solutions (US TIES): promotes the application of U.S. technologies and expertise to international environmental problems. It will focus on international technical assistance, training, and capacity-building programs.
- o Environmental and Restoration Technologies: a program to directly fund the development and commercialization of promising innovative technologies seen as "low-hanging fruit," such as soil washing technologies developed in the U.S. Its focus will be in the areas of monitoring, pollution prevention, and remediation/control. Monitoring and measurement activities may be developed into a separate area of emphasis in FY95.
- o Gaps, Barriers, and Incentives: a small effort in FY94, consisting primarily of a survey designed to identify critical gaps between environmental management problems and current technical solutions. It is intended to remove barriers to, and create incentives for, technology innovation and commercialization.

Ted Zagrobelny (U.S. Naval Facilities Engineering Command), asked how other federal agencies will be selected to participate in ETI projects. Ms. Kelly said that EPA has conducted a technology needs assessment and will be screening proposals for projects to fund in the next few months. Dr. Kovalick commented that planning for FY95 will include more outside input and that a new FCCSET Committee will be coordinating all federal agency environmental research and development.

Western Governors' Association Progress

Jim Souby, with the Western Governors' Association (WGA), described the WGA and its progress toward expediting cleanups of federal facilities in western States. The WGA is comprised of 18 western states and three Pacific flag territories, which together contain 60% of federally owned lands and 60% of the nation's cleanup and waste management companies. The WGA arose from meetings in the White House between federal agencies and western governors concerned about the slow pace of cleanups. To encourage a more cooperative approach to waste site cleanups and developing technical solutions to environmental problems, a Memorandum of Understanding was signed in July, 1991, forming a partnership among WGA, DOI, DOE, DOD, and EPA.

As part of this cooperative effort, the Joint Federal/Western

States Federal Advisory Committee to Develop On-Site Innovative Technologies (DOIT Committee) was created in December, 1992. The primary goal of the Committee is to clean up federal waste sites. A major objective is to improve how innovative remediation technologies get developed, deployed, evaluated, and eventually commercialized. DOIT Committee members, appointed in January, 1993, include the Secretaries of DOD, DOI, and DOE; EPA Administrator; State governors from Idaho, Nevada, Arizona, and California; and Ex Officio members named by OMB and the WGA Executive Director.

The DOIT Committee created four working groups organized around issues of mutual concern: mine waste, mixed waste, munitions waste, and waste at military bases. The purpose of the working groups is to identify a set of demonstrations for FY94 at which to try new approaches for acceptably expediting technology deployment at federal facilities. Along with the technology demonstrations, new approaches for stakeholder participation, permitting, collecting performance and cost data, and disseminating results will be tested. The four working groups and one ad hoc General Criteria Working Group met in May, 1993, to begin consideration of candidate demonstration sites.

In addition to the working groups, the DOIT Committee convened two roundtables to address cross-cutting issues: a Commercialization Roundtable was held in August, 1993, and a Regulatory Barriers Roundtable was held in October, 1993. The following seven major findings from these roundtables will be factored into the new approaches being pursued at demonstration sites:

- o Test new approaches to standardized performance and cost data. The private sector is interested in a format that they can rely on. TIO is developing a model in conjunction with DOE and DOD that will be tested at demonstration sites.
- o Test a simplified procurement process. The DOIT Committee will sponsor a Procurement Roundtable to develop ideas to test during the demonstrations. Dr. Kovalick commented that it may be beneficial to use the more flexible State funding mechanisms for demonstrations because federal procurement is so difficult to move.
- o Test a process for interstate permitting reciprocity (when a technology is successfully tested and approved for use in one state it is then approved for use in other states). WGA and ten

western states are developing regional permitting guidelines for testing at demonstration sites. Multiple states will review permit applications for the FY94 demonstrations using the guidelines. At the end of the demonstrations, states will discuss whether they would make the same decisions based upon application information and whether the guidelines could serve as a mechanism for true regional reciprocity. The regional permitting guidelines will be distributed broadly to industry so they know what to expect during the permit process.

- o Test ways to limit, share, or indemnify liability. Several demonstrations could be used to evaluate the effects of limiting liability.
- o Test ways to reduce the cost of obtaining front-end permits for innovative technology demonstrations. Demonstrations could be used to test expedited joint and concurrent review of permit applications across federal, State, and local agencies.
- o Test ways to increase resources available to regulators to consider innovative technologies. Demonstrations will test ways for State and federal agencies to improve information sharing, streamline permit and other approvals, and use telecommunications.
- o Test new approaches to more effective and timely public participation. Greater opportunity for public participation should increase public trust, thereby speeding the permitting process and creating incentives to consider innovative technologies.

Mr. Souby said that final working group reports will be presented to the DOIT Committee at the beginning of December, and the Committee will select 12 sites for federal technology demonstrations. The DOIT Committee will meet on February 1, 1994, in conjunction with the National Governors' Association winter meeting, to present its recommendations. Mr. Souby added that Roundtables on Procurement and Liability will be held before the end of February. In addition, working groups will begin work soon to identify projects for FY95, which could address longer term issues, such as procurement/contracting reform, land use planning, site/problem prioritization, and risk assessment. Dr. Kovalick said he hoped the Roundtable could be briefed again on DOIT Committee activities at its next full meeting in May, 1994.

RCRA Initiative to Foster the Use of Innovative Technologies

Richard Kinch (EPA, Office of Solid Waste) reviewed an initiative to modify RCRA Land Disposal Restriction (LDR) regulations on soil cleanup levels to foster the use of innovative technologies. The LDR Phase II Proposed Rules (published in the Federal Register on September 14, 1993) governing treatment standards for hazardous soils gives three options for determining the concentration of hazardous constituents in soils below which the soils may be land disposed. Hazardous soils can be land disposed where the concentration of hazardous constituents: 1) have been reduced by 90% of their original concentration or have been reduced to their Universal Treatment Standards, (for example, where an original contaminant concentration was 1,000 ppm and the Universal Treatment Standard for that contaminant is 50 ppm, then treating down to 100 ppm would be in compliance with LDRs but treatment below 50 ppm would not be required); 2) have been reduced by 90% of their original concentrations (or attain their Universal Treatment Standard) unless the concentrations are higher than 10 times the Universal Treatment Standard; and 3) have been reduced to 10 times the Universal Treatment Standards. Mr. Kinch pointed out that this is a simpler system that provides an envelope to encompass application of an array of technologies; however, there will be controversy over the Universal Treatment Standard levels and whether they are risk-based versus technology-based standards. The LDR Phase II Final Rule must be promulgated by July 31, 1994, but the comment period has been extended to March 15, 1994.

Mr. Kinch also described efforts to integrate LDR and the Hazardous Waste Identification Rule (HWIR) for Media, which is applicable to cleanups with Federal/State oversight but will not cover all soils. HWIR for Media will have a risk-based front end with a technology-based overlay. That is, if contaminated material passes a front-end risk assessment, then LDRs will not apply, but if the material fails the front-end risk assessment, then it must be treated to meet technology-based standards. The HWIR for Media rule is scheduled to be proposed sometime in late 1994. Dr. Kovalick pointed out that LDRs are used as Superfund ARARs, so federal agencies may want to take a close look at the proposed rules and provide their comments prior to closure of the comment period.

Wrap-Up

Dr. Kovalick reviewed plans for future Roundtable meetings. There will be another Ad Hoc Cost and Performance Working Group meeting in April to review the EPA and Air Force pilot studies on collecting cost and performance data and to hold a mid-course

review of the compendium described by Mr. Freestone. The April meeting may be preceded by a meeting in February to take a mid-course look at the pilot studies and discuss data handling issues. The next full Roundtable meeting will be held in May, 1994. Dan Powell (EPA/TIO) said that three Roundtable documents will soon go to the printer and he will be calling participating agencies to join the printing request. Dr. Kovalick thanked the Roundtable attendees for their participation and the meeting was adjourned.

ATTACHMENT 1

Participants
FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE
November 30, 1993

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202/260-9755		
Mike Mastracci	U.S. EPA/ORD/OEETD	
202/260-8933		
Steve McCarel	U.S. Navy/Naval Facilities Engineering Service	
	Center	805/982-4857
Dennis Miller	EG&G Idaho, Inc./U.S. DOE	
202/586-3022		
Col. Jim Owendoff	U.S. Air Force	
202/767-4616		
Joe Paladino	U.S. DOE	
301/903-7449		
Dan Powell	U.S. EPA/OSWER/TIO	
703/308-8827		
David Rubenson	RAND	
310/393-0411		
Wayne Sisk	U.S. Army/Army Environmental Center	
410/671-1280		
Jim Souby	Western Governors' Association	
303/625-9578		
Chris van L ^u ben Sels	Natural Resources Defense	
	Council	202/783-7800
Richard Weisman	Radian Corp.	
703/713-1500		
Gerald Westerbeck	U.S. DOE/OER	
202/586-9393		
Ted Zagrobelny	U.S. Naval Facilities Engineering Command	
703/325-8176		

ATTACHMENT 2

Draft Proposed Strategy for Documenting Federal Cleanups
Cost and Performance Data

ATTACHMENT 3

Invitation to DOE Workshop on Performance and Cost