



FY03 FINAL REPORT



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Technology Transfer to U.S. Independent Oil and
Natural Gas Producers

Final Report

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ABSTRACT

The Petroleum Technology Transfer Council (PTTC) continued pursuing its mission of assisting U.S. independent oil and gas producers to make timely, informed technology decisions. Functioning as a cohesive national organization, PTTC has active grassroots programs through its 10 Regional Lead Organizations (RLOs) and 3 Satellite Offices that encompass all of the oil- and natural gas-producing regions in the U.S. Active volunteer leadership from the Board and regional Producer Advisory Groups keeps activities focused on producer's needs. Technical expertise and personal networks of national and regional staff enable PTTC to deliver focused, technology-related information in a manner that is cost and time effective for independents. The organization effectively combines federal funding through the Department of Energy's (DOE) Office of Fossil Energy with matching state and industry funding, forming a unique partnership.

This final report summarizes PTTC's accomplishments. In this final fiscal year of the contract, activities exceeded prior annual activity levels by significant percentages. Strategic planning implemented during the year is focusing PTTC's attention on changes that will bear fruit in the future. Networking and connections are increasing PTTC's sphere of influence with both producers and the service sector. PTTC's reputation for unbiased bottom-line information stimulates cooperative ventures.

In FY03 PTTC's regions held 169 workshops, drawing 8,616 attendees. There were nearly 25,000 reported contacts. This represents a 38% increase in attendance and 34% increase in contacts as compared to FY02 activity. Repeat attendance at regional workshops, a measure of customer satisfaction and value received, remained strong at 50%. 39% of participants in regional workshops respond "Yes" on feedback forms when asked if they are applying technologies based on knowledge gained through PTTC. This feedback confirms that producers are taking action with the information they receive. RLO Directors captured examples demonstrating how PTTC activities influenced industry activity. Additional follow-up in all regions explored industry's awareness of PTTC and the services it provides.

PTTC publishes monthly case studies in the *Petroleum Technology Digest* in *World Oil* and monthly *Tech Connections* columns in the *American Oil and Gas Reporter*. Email Tech Alerts are utilized to notify the O&G community of DOE solicitations and demonstration results, PTTC key technical information and meetings, as well as industry highlights. Workshop summaries are posted online at www.pttc.org. PTTC maintains an active exhibit schedule at national industry events. The national communications effort continues to expand the audience PTTC reaches.

The network of national and regional websites has proven effective for conveying technology-related information and facilitating user's access to basic oil and gas data, which supplement regional and national newsletters. The regions frequently work with professional societies and producer associations in co-sponsored events and there is a conscious effort to incorporate findings from DOE-supported research, development and demonstration (RD&D) projects within events. The level of software training varies by region, with the Rocky Mountain Region taking the lead. Where appropriate, regions develop information products that provide a service to industry and, in some cases, generate moderate revenues. Data access is an on-going industry priority, so all regions work to facilitate access to public source databases. Various outreach programs also emanate from the resource centers, including targeted visits to producers.

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EXECUTIVE SUMMARY

The Petroleum Technology Transfer Council (PTTC) continued pursuing its mission of helping U.S. independent oil and gas producers make timely, informed technology decisions during Fiscal Year 2003 (FY03). Functioning as a cohesive national organization, PTTC has active grassroots programs through its 13 Regional Lead Organizations (RLOs) and satellite offices. They bring research and academia to the table via their association with geological surveys and engineering departments. The regional directors interact with independent oil and gas producers through technology workshops, resource centers, websites, newsletters, various technical publications and other outreach efforts. These are guided by regional Producer Advisory Groups (PAGs), who are area operators, service companies and consultants working with the regional networks. The role of the national Headquarters (HQ) staff includes planning and managing the PTTC program, conducting nation wide technology transfer activities, and implementing a comprehensive communications plan.

The organization effectively combines federal funding through the Department of Energy's (DOE) National Energy Technology Laboratory (NETL) with state and industry funding to achieve important goals for all of these sectors. This integrated funding base, combined with industry volunteers guiding PTTC's activities and the dedication of national and regional staff, are achieving notable results. PTTC is increasingly recognized as a critical resource for information and access to technologies, especially for smaller companies without direct contact with R&D efforts.

This final report summarizes PTTC's accomplishments during the contract period, with emphasis on FY03 as compared to previous four years. Activities exceeded prior annual activity levels by significant percentages. Strategic planning implemented during the year is focusing PTTC's attention on changes that will bear fruit in the future. Networking and connections made possible through Executive Director Don Duttlinger's location in Houston, the heart of the oil industry, are increasing PTTC's sphere of influence with both producers and the service sector. PTTC's reputation for unbiased bottom line information stimulates cooperative ventures with other organizations. Efforts to build the contact database, exhibit at more trade shows and a growing E-mail Technology Alert service are expanding PTTC's audience. All considered, the PTTC network has proven to be an effective way to reach domestic producers.

National-Level Program

PTTC's Board of Directors met three times during FY03 to review goals and objectives. In the initial Board meeting of the year, the Board reviewed and approved FY03 regional plans and budgets. Bylaw changes recommended by the Bylaws Committee and HQ staff were also discussed and adopted. In March 2003, the Board elected new leadership with James Bruning, Bruning, Resources, LLC, Fort Smith, Arkansas, becoming Chairman and Brook Phifer, Nico Resources, LLC, Littleton, Colorado, becoming Vice Chairman. Several Board positions also changed. The RLO Directors, who were meeting jointly with the Board, presented success stories illustrating how industry had learned something through PTTC and were applying that knowledge. Both Board members and the RLO Directors participated in Hill Visits following the meeting. In July 2003 the Board focused on strategic planning and final preparations for the impending five-year contract with DOE.

PTTC's outreach and connections grew significantly during FY03, through networking facilitated by its Houston HQ location and a deliberate focus on growth. Director Don Duttlinger facilitated strategic thinking by the Board, RLO Directors and HQ staff as PTTC looked forward to meeting industry's and DOE's needs during the next five to 10 years. Kathy Chapman, Director of Business Affairs, remained in the Washington area fulfilling her duties on contractual and financial issues. Lance Cole, National Project Manager, continued to serve PTTC on a contract basis from Sand Springs, Oklahoma. HQ and other support staff added valued assistance for all elements of the organization including web maintenance and database management.

PTTC's national organization continues its oversight responsibility for the regional programs. Repeat attendance at regional workshops, a measure of customer satisfaction and value received, remained strong at

50%. 39% of participants in regional workshops respond “Yes” on feedback forms when asked if they are applying technologies based on knowledge gained through PTTC. This feedback confirms that producers are taking action with the information they receive. RLO Directors captured some examples, sharing those examples with the Board and in selected inter-regional events. HQ coordinated follow-up calling to attendees of two regional workshop series, Hunton workshops in Oklahoma and GeoPlus PETRA software training in Colorado, to more specifically define impact of these programs. Additional follow-up in all regions explored industry’s awareness of PTTC and the services it provides. As in past years, the annual planning/budgeting process involved the PAGs, HQ staff, and the Board. Regional activities exceeded prior record levels by significant percentages.

PTTC continued published monthly case studies in the *Petroleum Technology Digest* in *World Oil*. Begun in September 1999, the *Digest* is a joint effort of PTTC and Gulf Publishing. *World Oil*’s circulation exceeds 35,000 readers worldwide. Since inception, PTTC has delivered 54 case studies through the *Digest*. Feedback is overwhelmingly positive. Producers have noted that they learned about and applied technologies new to their operations. Several technology providers have indicated that exposure through the *Digest* brought them new customers, from new service areas.

PTTC posts summaries of regional workshops on its website as *Solutions From the Field*. This allows those not attending the workshop to gain from the insights presented. Fourteen summaries were posted during FY03, bringing the total, not counting pre-1997 workshops, to 95 summaries.

With direct input from IPAA, PTTC developed a tech session that will be delivered preceding IPAA’s annual meeting in New Orleans in October 2003. Topics of sweeping national interest are planned for the diverse producers who attend the meeting. The IPAA is well known for national communication of technical barriers via the Natural Gas and Crude Oil Committees. Utilizing this input, these barriers can be addressed by industry subject matter experts and pave the way for brainstorming of potential solutions that further advance upstream natural gas and oil technology development.

Nine of 10 regions incorporated findings from DOE-supported R&D within their technology workshop program, with some able to do so in several events. HQ staff monitored awards and R&D progress within DOE’s Stripper Well Consortium, looking for tech transfer opportunities. All 10 regions co-sponsored or participated in some fashion in events involving professional societies or producer associations. Many regions found multiple opportunities for cooperation. The “lunch and learn” concept with technology providers, which was begun in FY02, is being steadily expanded in the South Midcontinent and Texas regions.

PTTC continued its multi-faceted national communications program. Circulation of its 16-page quarterly newsletter, *PTTC Network News*, grew to about 14,000 individuals. The vast majority is from industry with more than 60% of those being independents. Circulation for the E-mail Tech Alert has grown to more than 4,000. Monthly Tech Connections columns for the *American Oil and Gas Reporter* and occasional articles or columns for trade journals provide additional venues for transferring technology and building name awareness.

By yearend FY03, usage of the national website, www.pttc.org, had increased to more than 14,000 user sessions per month with page views approaching 45,000 per month. The website provides timely calendar information, an archive for technology insights and information, national links, in addition to serving as a gateway to the regional and satellite websites. PTTC expanded its intranet, PTTC Net, providing more historical reports, Board meeting agendas and information, and adding a staff calendar. The Board, RLO and HQ staff have access to PTTC Net via individual user name and password.

Regional-Level Program

In FY03, PTTC's regions held a total of 169 workshops drawing 8,616 individuals. There were nearly 25,000 reported contacts. This performance represents a 15% increase in the number of workshops, a 38% increase in attendance, and a 34% increase in contacts compared to FY02, which was itself a record year. Attendance averaged 51 individuals per workshop with 85% of attendees coming from the E&P industry. Of the industry attendees, 50% are repeat attenders, that is, they have previously attended a PTTC workshop in that region. FY04 plans project continued high activity, though not at FY03 record levels.

The regional resource centers continued to function as a focal point or hub for contact with industry. The products and services available through these centers include: (1) access to information and data resources, (2) expert response to contacts and inquiries, (3) demonstration and training for E&P software, (4) information products, (5) special purpose databases, and (6) other outreach efforts. Contact activity now averages nearly 10 contacts per region per working day. Six regions reported more than 1,000 contacts during the year. By far the largest percentage of inquiries is for basic oil and gas data or calendar/event information. A small percentage of contacts, estimated in the 10 to 20 percent range, are true technical inquiries requiring professional expertise to respond.

Software training courses are offered within the regions. Combined, the regions conducted 27 software-training courses with 20 of those coming from the Rocky Mountain Region. Other regions performing software training included the Eastern Gulf, Midwest, North Midcontinent and Texas regions. The Rocky Mountain Region also supports a Simulation Users Group. Strong support from other partners (AAPG, Colorado School of Mines, private donors, and software vendors) enables the Rocky Mountain Region to maintain its extensive software-training schedule.

Where appropriate, regions develop information products that provide a service to industry and, in some cases, generate moderate revenues. The Central Gulf Region shaped development of Louisiana Department of Natural Resources SONRIS online information system and conducted workshops to familiarize industry with how to use it. Since it has some advantages, the Region is updating the Louisiana Desktop Well Reference (LDWR) CD-ROM and planning work to incorporate pre-1977 data. The Midwest Region and the Illinois State Geological Survey are developing base and custom mapping products. The Southwest Region updated the NM Well Location CD, plus Mesa Verde workshop information is available on CD.

Data access is an on-going industry priority, so all regions work to facilitate access to existing databases, exemplified by the Southwest Region's work improving access to New Mexico production data and the North Midcontinent Region's support of the Digital Petroleum Atlas. The Eastern Gulf supports the geological-oriented website developed by the Mississippi Office of Geology. The Midwest Region continues to develop its core and waterflood database, while the Michigan satellite is continually expanding its digital offerings. In the Appalachian Region, staff has developed interactive databases of horizontal, coalbed methane and Trenton-Black River activity. Although usage has been admittedly low, the Rocky Mountain Region continues to explore options for its Data Exchange. Online core listings such as that developed by Texas Bureau of Economic Geology are one option.

Various outreach programs also emanate from the resource centers. The Central Gulf, Midwest, North Midcontinent and Southwest regions make targeted visits to producers. The West Coast Trouble Shooters program provides one-on-one or small group interactions, as does continued work by the South Midcontinent and West Coast regions in PTTC's PUMP project. Student internship programs, COMET in the West Coast and Futures in Energy in the Rocky Mountain Region, benefit students and sponsors alike. An online discussion forum begun by the Texas Region late in FY03 offers PTTC's growing audience yet another way to interact with PTTC. Numerous other examples exist showing how the regions cooperate with their parent organizations or other groups to conduct mutually beneficial outreach.

Regional websites focus on calendar/event information, workshop summaries and presentations, case studies, technical reports of R&D project results, access to databases, and useful links to other sites. Regional website traffic varies considerably, but three regions (Texas, North Midcontinent, and Southwest) experience higher traffic volumes. Use of a common website statistics program among the RLOs has improved consistency in reporting website statistics. Combined, the regional websites experience about 69,000 user sessions per month, plus more from Texas's Internet outreach program.

Seven of 10 regions have a printed regional newsletter. The Appalachian Region relies solely on a lengthy online newsletter, while the Central Gulf and West Coast regions rely on contributions to their respective producer association's communications. Of the printed newsletters, four are quarterly and three are semi-annual (Midwest, North Midcontinent and Southwest). Combined circulation is about 20,000. Most newsletters are new efforts started under PTTC, but some continue the newsletter tradition of the RLO organization. Typically, newsletters are also posted on the website. Some regions also develop special electronic newsletters for their websites.

39% of producers who attend regional workshops respond "Yes" on feedback forms when asked if they are applying technologies based on knowledge gained through PTTC, confirming that producers are taking action with the information they receive. Examples of actions that industry has taken, at least partially from information received through PTTC, have been documented for each region. Follow-up calls with participants in two regional workshop series (Hunton play in Oklahoma and GeoPlus PETRA software training in Colorado) document specific impact could justify the total investment in PTTC. Follow-up in all regions indicates producers are aware of PTTC, but that they don't fully understand the spectrum of services that PTTC provides. This indicates there is room for improvement and growth at gaining additional participation in the relatively new program.

Key alliances with the major O&G Societies have continued to develop over the nine-program year life of the PTTC. The AAPG, IOGCC, IPAA, SEG and SPE offer discounted or free exhibit space at national and regional meetings. Cooperation with PTCC has meant that more upstream technology is delivered to the remote basins of the country and additional rural producers are made aware of services offered by the organizations who may not be able to travel to attend larger regional meetings. Driven to the web networks, independent producers can gain access to demonstration project results that show them how to increase production and reduce costs while they harvest left behind hydrocarbons. This added production is a significant contributor to overall domestic energy yield and stimulates local jobs and business opportunities across the U.S.

I. INTRODUCTION

In the early 1990s, industry and government energy experts recognized the urgent need for improved technology transfer processes for the U.S. upstream petroleum industry. As a result, domestic oil and natural gas producers established the Petroleum Technology Transfer Council (PTTC) in 1993 as a national not-for-profit organization. Well recognized as a growing organization, PTTC is demonstrating greater efficiency as it continues to exceed prior activity levels. Industry feedback confirms increasingly recognition of PTTC's value to them.

Strategic planning conducted in 2003 during the process of preparing for a new five-year contract drives PTTC's current direction. Led by a Strategic Planning Subcommittee of the Board, PTTC reviewed the prior Formal Strategic Plan developed in FY00, extracted insights from the proposal/contracting process, and surveyed Board members about current strategic planning needs. Strategic planning continues with a special session scheduled for the October 2003 Board meeting. The process has identified areas needing attention, but it has confirmed that PTTC's mission, stated below, is still right on target.

PTTC benefits the nation by helping U.S. independent oil and natural gas producers make timely, informed technology decisions.

PTTC is a unique example of how an organization can utilize federal, state, and industry funding to achieve important goals for all of these sectors. This integrated funding base, combined with the guidance of industry volunteers and the dedication of its national and regional staff, is achieving notable results as evidenced by the organizational milestones presented in **Appendix A**. PTTC is increasingly recognized as a critical resource for information and access to technology—especially for smaller companies.

In FY03, regional activity exceeded previous record levels, representing a 15% increase in workshop activity, a 38% increase in attendance, and a 34% increase in contact activity. Regional activity is summarized in both tabular (**Table 1**) and graphical (**Figure 1**) form. Average workshop attendance was 51, and contact activity represents nearly 10 per day per region. Planned activity level for FY04 remains high.

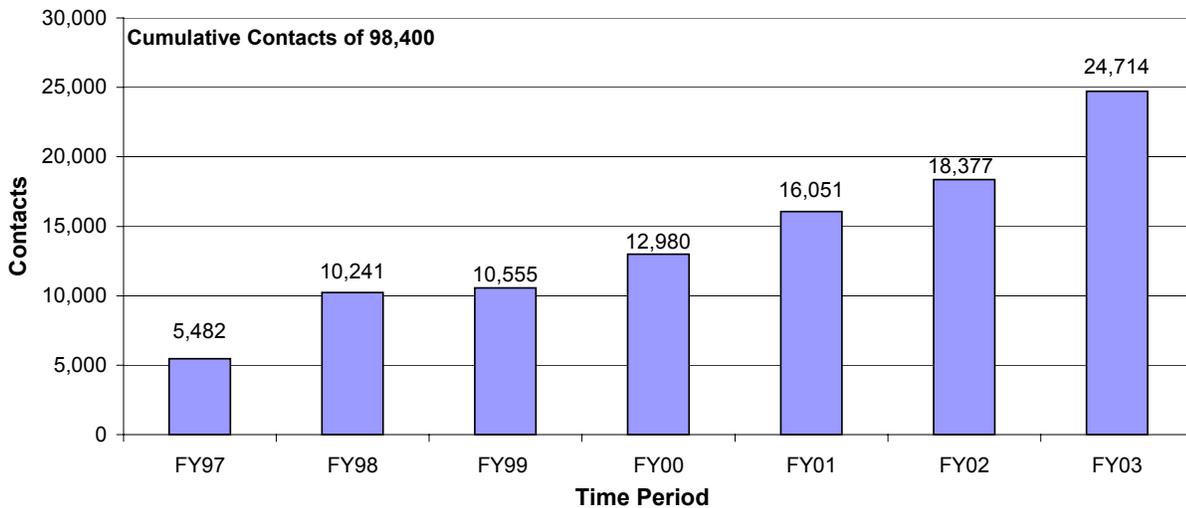
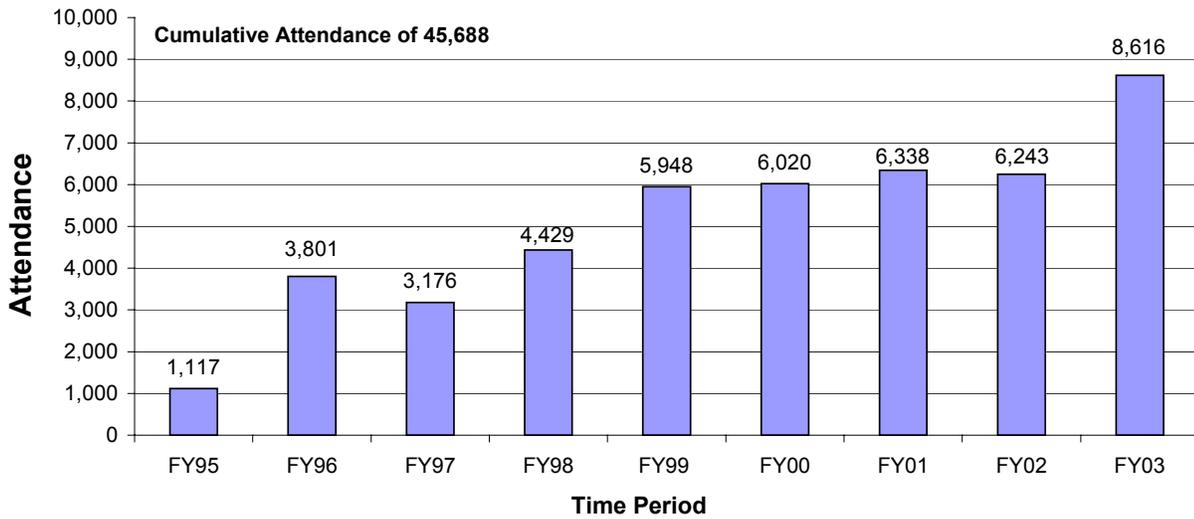
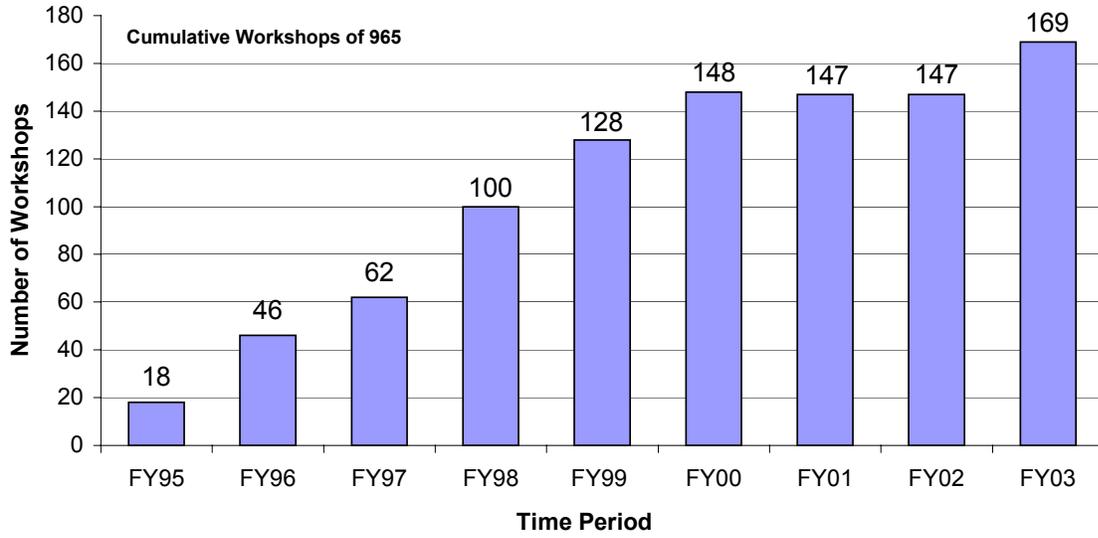
Table 1—Measures of PTTC's Regional Activities

Time Period	Workshops		Attendance		From E&P Industry		Outreach Contacts	
	Annual	Cumulative	Annual	Cumulative	Attendance	%	Annual	Cumulative
FY95	18	18	1,117	1,117				
FY96	46	64	3,801	4,918		83		
FY97	62	126	3,176	8,094		85	5,482	5,482
FY98	100	226	4,429	12,523	3,235	73	10,241	15,723
FY99	128	354	5,948	18,471	4,935	83	10,555	26,278
FY00	148	502	6,020	24,491	4,923	82	12,980	39,258
FY01	147	649	6,338	30,829	5,227	82	16,051	55,309
FY02	147	796	6,243	37,072	5,177	83	18,377	73,686
FY03	169	965	8,616	45,688	7,335	85	24,714	98,400
Averaging 51 attendees per workshop					Approaching 10 contacts per day/region			

Federal funds partially supporting PTTC's operation come through a multi-year grant awarded by DOE's Office of Fossil Energy National Energy Technology Laboratory. The grant, originally scheduled to end April 20, 2003, was extended through September 30, 2003. This report serves as a final progress report highlighting results and illustrates PTTC's increasing impact on the domestic E&P industry.

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Figure 1—Regional Outreach Statistics



Although a national organization, PTTC is regionally focused. Therefore, this report is divided into two primary sections:

- **Section II** addresses PTTC's progress at the national level. It is organized according to the task definitions within PTTC's current statement of work under the DOE grant.
- **Section III** reports progress at the regional level and, for the most part, aggregates information for the 10 regions so that common trends and results can be identified. This section is organized according to the core technology transfer functions that guide the RLOs.

Appendix A presents national organizational milestones. **Appendix B** presents detailed information by region of FY03 regional accomplishments. **Remaining appendices**, which include Board and RLO Director rosters among others, provide background information.

II. RESULTS AT THE NATIONAL LEVEL

The Petroleum Technology Transfer Council (PTTC) functions as a cohesive national organization that implements industry's directives through both its national and regional programs. The role of the national Headquarters (HQ) includes planning and managing all aspects of the PTTC program, conducting nation-wide technology transfer activities, and implementing a comprehensive communications effort.

A. Planning and Managing the PTTC Program

There are many aspects of planning and managing the overall program. The financial aspects are documented in a separate Financial Report to DOE, which is submitted quarterly. This Technical Progress Report will focus on several other key areas – those involving human resources, strategic planning, and oversight of the regional programs.

1. Human Resources

Responsibilities in human resources require that there are experienced and knowledgeable staff members and contractors available to fulfill the requirements of PTTC's commitment with DOE and to perform the valuable technology transfer activities. It also involves working with industry to ensure that PTTC's Board and regional Producer Advisory Groups (PAGs) are filled with active volunteers.

a. Headquarters Staff

The HQ staff, which continued to work as a team in FY03 to accomplish many goals, includes:

—Donald F. Duttlinger, Executive Director, continues to provide overall leadership to staff and the RLOs in executing the Board's direction. Under his leadership, PTTC's connections with industry have been strengthened through direct interaction in the upstream natural gas and oil community, a focus on expanding the database for national communications, new communications initiatives, and an expanded exhibit schedule. Through strategic and contract planning exercises, he has helped PTTC clarify its value and position itself to deliver technology to upstream producers.

—Lance Cole, National Project Manager, Sand Springs, Oklahoma, continues to serve under contract overseeing all of the RLO technical activities utilizing PAG direction and coordinating inter-regional efforts. He also ensures fulfillment of required reporting and deliverables for HQ, supports national communications efforts, serves as technical adviser, and assists in strategic planning and other special projects.

—Kathy Chapman, Director of Business Affairs, who works remotely from the Washington area, has been with PTTC from its beginning. She is responsible for all contractual matters with DOE, the Regional Lead Organizations (RLOs), and other contractors. Contracting effort this year was significant with ending of the current contract and preparation for a new grant. Chapman also serves as PTTC's liaison to DOE Headquarters and other groups located in the DC area. In addition, she manages the financial and accounting systems and coordinates with Duttlinger and Cole on strategic issues.

—Norma Gutierrez, Office Manager, continues to provide records management, meeting planning, and exhibiting support services. She provides a critical communications link between HQ and the Board, RLOs and industry by assuring reporting is documented and distributed throughout the organization.

—Karina Fay, Information Management Specialist, continues to provide information management services supporting HQ, especially in the database realm. She is also increasingly becoming involved in website development.

—Kristi Lovendahl, Tulsa, Oklahoma, serves PTTC on a contract basis providing: (1) desktop publishing services for the national newsletter, *PTTC Network News*, (2) website maintenance and design services, and (3) support on database and publications-oriented projects. Outsourcing of these vital services has proven very cost effective for PTTC.

For selected technology-oriented tasks, such as the *Petroleum Technology Digest*, workshop summaries, and *PTTC Network News*, HQ has retained consultants on an as-needed basis to perform specific tasks. Being of a technical nature, their efforts are mostly coordinated by Mr. Cole.

b. Board of Directors

Twenty-two industry volunteers serve on PTTC's Board of Directors. They include independent oil and gas producers representing the 10 regions, in addition to the Chairman, Vice Chairman and Immediate Past Chairman. Other Board members include representatives from national industry organizations, majors and service companies, and professional societies. *James Bruning*, Bruning Resources, LLC, Fort Smith, Arkansas, and *Brook Phifer*, Nico Resources, LLC, Littleton, Colorado, were elected as Chairman and Vice Chairman respectively during the March 2003 Board Meeting. Other Board member changes include:

- Central Gulf Region, Joe Jacobs, Gas Masters of America, Inc., Monroe, LA
- North Midcontinent Region, Mark Shreve, Mull Drilling Co., Inc., Wichita, KS
- Rocky Mountain Region, Robert McDougall, Phoenix Production Co., Cody, WY
- RLO representative, Dave Morse, Midwest Region, Champaign, IL
- SEG representative, Hugh Rowlett, ConocoPhillips, Houston, TX

A Nominating Committee, composed of four members including the Chairman, Immediate Past Chairman, and two PAG Chairmen, coordinates nominations for leadership changes and some committees, while the Chairman appoints other committees.

During FY03 PTTC's Board met three times: (1) on October 28, 2002 in Dallas, Texas, in conjunction with a meeting of the Independent Petroleum Association of America (IPAA); (2) on March 17, 2003 in Washington, D.C., as a joint meeting of the Board and RLOs and for visits to Capitol Hill; and (3) on July 14, 2003 in St. Louis, Missouri. Meetings allow the Board to complete required business, brainstorm about how to further PTTC, and, time permitting, hear industry presentations about new technologies or companies taking new approaches.

In October 2002 the Board reviewed and approved regional plans and budgets for FY03 activities. Bylaw changes recommended by the Bylaws Committee and HQ staff were also discussed and adopted.

In March 2003 the Board approved the PTTC contract with the California Energy Commission for work to be performed by the West Coast Region under PTTC's PUMP contract. This contract provides cost share for the PUMP work there. Board member changes were also ratified during this meeting. Chairman James Bruning appointed Gene Ames, Texas Region PAG Chairman, to lead a newly formed Strategic Planning Committee. Other Committee members include Brook Phifer, Vice Chairman, and Mark Shreve, North Midcontinent PAG Chairman. Brook Phifer also assumed leadership of the Compensation Committee. RLO Directors, who were meeting jointly with the Board, gave brief presentations presenting evidence of PTTC favorably impacting industry in their region. Board Alternate for the service sector, Mo Cordes, presented an analysis that Schlumberger had performed of PTTC impact on coalbed methane technology adoption in the Midcontinent.

In July 2003 the Board focused on an anticipated new five-year contract with DOE and on strategic planning. Gene Ames, Chairman of the Strategic Planning Committee, presented results from a survey of Board members. Survey results and discussions during the meeting provided guidance to the

Committee on where to focus further efforts. Two primary areas are strengthening the volunteers within the PAGs and expanding connections with the service sector. Further discussions are planned for the October 2003 Board meeting. During the July meeting, Lance Cole also reported on follow-up calling that HQ had initiated to determine the impact of selected workshops in a couple regions and to measure the awareness of PTTC and its services across the nation. Impact of two regional workshop series is captured in **Table 4, Sec. III**. Comments concerning awareness are captured in the subsequent section on oversight of the regional programs.

c. *Management & Budget Committee*

PTTC's Management & Budget (M&B) Committee, led by the Vice Chairman, provides guidance to the HQ staff between Board meetings. The group meets approximately monthly, or as needed, by conference call with the Executive Director and other key staff. The Committee closely monitored activity related to (1) extension of the DOE contract through September 2003 and (2) the subsequent five-year contract with DOE. They also have a major role in planning Board meeting agendas. Typically, future leadership comes from those within the M&B Committee. Current members include Chairman Bruning, Vice Chairman Phifer, Gene Ames, Texas PAG Chairman, and Brian Sims, Eastern Gulf PAG Chairman.

d. *Producer Advisory Groups*

Each region has a group of voluntary industry representatives serving as a local advisory group for the program. These PAGs work very closely with their corresponding RLO Director and are responsible for guiding the regional program. Their participation is especially critical during the annual planning process, as the PAGs must approve the region's annual plan before submittal to PTTC. They also provide critical connections to the diverse groups present within each region. Recent strategic planning efforts have placed a strong focus on improving the participation of existing members, recruiting new members and solidifying connections to industry groups present in each region. HQ staff is working alongside PAG Chairs and the RLO Directors to accomplish this.

2. *Oversight of Regional Programs*

HQ has oversight responsibility for the regions, an important aspect being the annual planning and budgeting process. RLO commitment, generally far above minimum levels, allowed regional activity to exceed prior record levels—more than 8,600 workshop participants from 169 workshops. These statistics include co-sponsorship of significant technology-oriented events in several regions. Plans for FY04, approved during an October 2003 Board meeting, forecast continued high activity levels.

The Regional Directors met jointly with the Board in Washington in March 2003, plus there were a couple conference calls during the year. HQ staff participated in PAG meetings in eight of 10 regions during the year, either in person or through conference calls. HQ staff also participated in workshops in six of 10 regions. Serving as the primary HQ contact with the RLOs, Mr. Cole works with RLO Directors and staff regarding implementation of the annual plans, potential technology transfer opportunities, and regional input for national communications.

From the start, PTTC has striven to capture and report data that demonstrate its impact on the U.S. upstream oil and gas industry. Most data are activity-oriented statistics (# of workshops, attendance, resource center contacts, website usage, etc.). Since FY00 PTTC has been capturing and reporting the % of industry attendees at a workshop who are repeat attenders. Of 145 workshops in FY03 where repeat attendance was reported, it averaged 50%. This percentage is lower than in FY02, which can be at least partially attributed to large cooperative events and some new emphases that are drawing a new audience, such as the Well Tender workshops in the Appalachian Region. Still, the percentage is high, reflecting that individuals see value and are coming back. Repeat attenders are defined as those individuals who have previously attended a workshop in the region since PTTC's beginning. It is encouraging that, after 10 years, PTTC is still expanding its audience.

Some examples of producers taking action and realizing production/profit increases are available at both the regional and national levels (see Table 4, Sec. III). Earlier examples have been documented in annual reports for prior years. HQ staff coordinated with Spears and Associates, Inc., a respected market research firm, about how to evaluate PTTC's impact and Richard Spears discussed this with the Board in October 2002. Responding to Board interest, RLO Directors presented regional success stories during the March 2003 Board meeting. In July 2003 HQ staff reported results of follow-up calling for attendees in two regional workshop series (Hunton play-based workshops in South Midcontinent Region and GeoPlus PETRA training in the Rocky Mountain Region). In both instances, significant impact was documented. Follow-up calls were also made to a small sample of attendees at workshops in all region to learn about (1) industry's awareness of PTTC and (2) their knowledge of the services that PTTC provides. With a couple exceptions, industry was well aware of PTTC, but there was an evident lack of knowledge of the full spectrum of services that PTTC provides. This knowledge is helping HQ focus its awareness building activities.

During FY03 PTTC organized sessions at several major society meetings where staff from several regions shared these success story examples. Purpose was twofold—to promote inter-regional technology transfer by exposing producers to technologies working in other regions and to reinforce the message that PTTC is making an impact.

PTTC has not attempted to make general extrapolations about reserves or production added through its efforts, but the impact of just a few of the documented examples, if attributed solely to PTTC, would provide an excellent return on the total investment in PTTC's tech transfer network through the years. In evaluating impact, PTTC well recognizes that it is just one among several factors that producers consider when making technology decisions.

One standardized question on the feedback form used at workshops asks respondents for a "Yes/No" answer to the question: *Have you used any new technologies based on knowledge gained through PTTC?* With data now available from 436 workshops, 39%, well more than a third of respondents, say "Yes." About half of those who respond "Yes" provide cryptic detail of the technology applied, but none provide sufficient detail for metrics without extensive follow-up. Resource limitations preclude extensive follow-up, but HQ staff are striving some follow-up calling within their work routine.

B. Conducting National Technology Transfer Activities

Although most of PTTC's technology transfer activities occur in the regions, the HQ staff also has significant responsibility in this area. There are many mechanisms for this function, through: (1) technology alerts and field results in *PTTC Network News*, (2) responding to inquiries received through the national office, (3) surveying producers needs on a national level, (4) developing case study-oriented products, such as the *Petroleum Technology Digest*, (5) capturing the highlights of regional workshops in summaries posted on PTTC's website, (6) providing technical support for IPAA meetings, and (7) coordinating PTTC activities with DOE's oil and gas R&D programs and those of other national organizations.

1. Newsletter Articles and Alerts

Technology information is received from multiple sources for *PTTC Network News*. Staff proactively searches trade journals, professional society literature, association newsletters, and the Internet looking for technology advances perceived to be of interest to independent producers.

Significant developments within the PTTC system or DOE's R&D program are also presented. Since 2000 PTTC has also been including state-of-the-art summaries developed by Karl Lang on high interest topics. Other information includes Tech Alert highlights, the bottom line and problem addressed of workshop summaries posted during the quarter, column titles, and concise summaries of case studies published in the *Petroleum Technology Digest*.

2. Answering National Inquiries

On average, the HQ office receives around 10 inquiries per week. These are forwarded to the appropriate RLO staff when (1) the inquiry is specific to a given region or (2) specialized expertise is known to exist within the regional resource centers. HQ staff responds directly to most of the inquiries. Many of the inquiries come from small technology developers. If the technology is supported by field data and perceived to be of interest to independent producers, HQ staff develops an alert or article to be published in *PTTC Network News* or encourages a case study for *Petroleum Technology Digest*. In many cases, PTTC staff makes referrals to other individuals or organizations that offer potential for further developing and/or commercializing the technology.

3. Problem Identification/Needs Assessment

PTTC last assessed technology needs on a national basis through a survey in August 1999. Although recognized as a need, PTTC has not yet implemented another national needs assessment exercise. The regions perform ongoing needs assessment through feedback from workshop participants, contacts, PAG input, participation in local trade meetings, and other sources. Through contacts at trade shows, HQ also obtains input on needs trends.

4. Petroleum Technology Digest

The *Petroleum Technology Digest*, begun in the fall of 1999, is a joint effort of PTTC and Gulf Publishing. PTTC solicits and compiles the case studies, and Gulf Publishing prints the *Digest* within its *World Oil* magazine. Case studies, which are authored by both producers and the appropriate technology providers, are brief—just 1,200 words or less, but they are written in the bottom-line format that producers desire. Through 2000 the *Digest* was distributed as a supplement to *World Oil* to their producer readership in North America. Beginning in 2001 quarterly *Digests* were incorporated within *World Oil* and distributed worldwide to more than 35,000 readers. In December 2002 PTTC began publishing case studies in each monthly issue.

Through the end of FY03, PTTC had published 54 case studies in the *Digest*. Industry response has been highly favorable and there are several anecdotes that producers are taking action—from early *Digests* through the most current. For producers, the case studies represent an opportunity to learn about technologies that may not be widely used in their area. For technology providers, the exposure provides access to geographical areas of the U.S. where they may not have a marketing presence. Example impacts for two smaller vendors have been documented on PTTC's website within the impact/feedback section (www.pttc.org/impact/impact_connecting.htm).

Case studies published during FY03 include:

- *September 2003*—Beam-operated gas compressor is profitable in various field applications
- *August 2003*—Two-piece, flow-thru plunger offers benefits for unloading gas wells
- *July 2003*—Horizontal drilling increases production in a reef formation
- *June 2003*—Oxy Permian's Cogdell Unit CO₂ flood responds rapidly to CO₂ injection
- *May 2003*—Electromagnetic survey defines reservoir, prevents drilling poor prospect
- *March 2003*—Reverse circulation drilling avoids damage to low-pressure gas reservoirs
- *February 2003*—Using capillary strings to unload gas wells and increase production
- *January 2003*—Polylined tubing reduces downhole failures
- *December 2002*—Frac modifications identified through virtual intelligence increase production

One monthly issue was missed during FY03. PTTC continues to work towards having a few case studies ready for publication at any time so that future issues are not missed. Consultants have been retained to assist PTTC with documenting industry case studies.

5. Solutions From the Field

As early as 1997, PTTC began summarizing content of its regional workshops so that a larger audience could have access. Since August 1999, PTTC has been posting workshop summaries with key technology insights and speaker contact information on the national website as *Solutions From the Field*. Fourteen summaries were posted online during FY03, and not counting pre-1997 summaries, a total of 95 summaries are now posted online. Highlights from summaries posted during a quarter are also presented in *PTTC Network News*.

6. Technical Support for IPAA Meetings

From inception, PTTC has striven to work cooperatively with IPAA to add a technology element to their meetings. In 1997 and 1998 Emerging Technologies Energy Conferences (ETECs) were held surrounding their annual meetings. ETEC, which was a full-day session, was suspended during 1999 and there are no plans to revive that concept. From 1999 through 2001, PTTC occasionally provided speakers for IPAA technology-oriented sessions. No cooperative effort occurred during FY02. IPAA has renewed interest and PTTC will develop a tech session to precede IPAA's 2003 annual meeting in New Orleans. Intent is to continue this cooperative effort.

7. Coordinating with DOE and Other Groups

Where appropriate, PTTC incorporates R&D findings from DOE-funded projects into regional workshops. Activities during FY03 that included some DOE-funded results were:

- *Appalachian Region*—workshop on 6/18/03 on “Produced Water and Associated Issues” leveraged PTTC’s DOE-supported PUMP project in the South Midcontinent Region
- *Eastern Gulf Region*—workshop on 11/20/02 highlighting “Sequence and Seismic Stratigraphic Interpretation: Lower Cretaceous Strata, Northeastern Gulf of Mexico”
- *Midwest Region*—workshop on 2/27/03 on “PUMP II Payzone Results” leveraged ISGS’s DOE-supported PUMP II project, workshop on 7/11/03 on “Produced Water and Associated Issues” leveraged PTTC’s DOE-supported PUMP project in the South Midcontinent Region
- *North Midcontinent Region*—workshops on 2/4/03 and 7/31/03 dealing with water shut-off treatments using gel polymers included research findings from TORP’s DOE funded polymer research. TORP Oil Recovery Conference on 3/13/03 included presentations on CO₂ flooding in the Lansing/Kansas City (Class Revisit), Stewart Field Waterflood (Class 1) and Technology Transfer (PTTC). Seminars on 8/18/03 in conjunction with KIOGA’s annual meeting included an Update of the CO₂ Pilot Test in the Lansing/Kansas City and GEMINI Online Software.
- *Rocky Mountain Region*—workshop on 11/15/02 highlighting “Exploitation of Hydrocarbon Reservoirs Using Intelligent Computing Software” presented approach/software developed within Luff Exploration’s DOE-supported project.
- *South Midcontinent Region*—coordinated eight workshops on “Produced Water and Associated Issues” as part of Region’s effort within PTTC’s DOE-supported PUMP project
- *Southwest Region*—workshop on 8/26/03 highlighting “Using the Delaware Fuzzy Expert Exploration (FEE Tool),” workshop/field trip on 5/21 and 5/22/03 “Mesa Verde Group Reservoirs;” workshop on 12/4-5/02 on “Produced Water in New Mexico” featured a variety of presentations from projects receiving DOE financial support
- *Texas Region*—workshops on 8/26&27/03 on “Produced Water and Associated Issues” in Midland and Farmers Branch leveraged PTTC’s DOE-supported PUMP project in the South Midcontinent Region
- *West Coast Region*—workshop on 10/17/02 on “Stripper Well Technologies” included presentation by John Vozniak from Maurer Technology, Inc. about the DOE-sponsored Electronic Tally Sheet for Handheld Computers, workshop on 12/6/02 highlighted the availability of the California Public Utilities Commission rebate program for small to medium size producers in terms of installing power saving retrofits on oilfield equipment, Independents’ Day conducted on 5/22/03 at Joint AAPG/SPE Meeting in Long Beach incorporated results from some projects receiving DOE financial report, plus NETL’s Bill Lawson was an invited

special speaker, workshop on 8/20/03 highlighted Venoco's DOE-supported project that demonstrated advanced reservoir characterization of the Monterey Formation in the South Ellwood Field, Trouble Shooters meeting on 9/18/03 highlighted available DOE funding for new microhole drilling initiative.

PTTC makes a special effort to acquaint independents with opportunities within DOE solicitations, particularly with the Technology Development with Independents program. Coverage of solicitations and awards is provided in *PTTC Network News* and within the E-mail Tech Alert. HQ staff monitors awards and progress within the DOE-supported Stripper Well Consortium, looking for technologies that are nearing the commercial stage where technology transfer would be appropriate.

PTTC supports DOE's Natural Gas and Oil Technology Partnership (NGOTP) program, striving to periodically include news from selected projects in *PTTC Network News*. HQ staff also strives to attend annual review panel meetings to stay abreast of project developments. In earlier years, PTTC actively recruited some review panel members.

PTTC actively coordinates with the major professional societies and producer associations. For the most part, cooperative opportunities are pursued at the regional level. Example efforts during the year included:

- *Appalachian Region*—RLO Director Patchen was a primary coordinator for the Joint AAPG-SPE Eastern Meeting in Pittsburgh in September 2003. The Region hosted a workshop on September 10th and invited several key speakers for technical sessions on the 8th and 9th.
- *Central Gulf Region*—one of several co-sponsors of the South Louisiana Onshore Petroleum Exploration Symposium with the New Orleans Geological Society on May 22, 2003 (attendance=333)
- *Eastern Gulf Region*—sponsored the Exploration & Production Issues session at the Alabama/Mississippi Division of the U.S. Oil and Gas Association annual meeting (attendance=103) and co-sponsored the 2003 International Coalbed Methane Symposium at the University of Alabama (attendance=256)
- *Midwest Region*—PUMP II Payzone Results at Illinois O&G Association, 2/27/03 (attendance=50), Mini-Seismic workshop at Illinois O&G Association, 3/5/03 (attendance=50), Mt. Simon Gas Storage modeling at SPE Gas Storage Section, 3/19/03 (attendance=40), Michigan Horizontal Drilling at SPE Northern Michigan, 3/20/03 (attendance=197)
- *North Midcontinent Region*—sponsored four mini-workshops on 8/19/03 in conjunction with KIOGA's annual meeting (CBM in Eastern Kansas, GEMINI, Dynamic Mapping of Kansas Oil and Gas Data with Spatial Data Engines and Internet Map Server, Bringing Carbon Dioxide Miscible Flooding to Kansas) (combined attendance=251).
- *Rocky Mountain Region*—RMAG Fall Symposium, Innovative Gas Exploration Concepts, Oct 2002 in Denver, CO (attendance=313); RMAG CBM Symposium, June 2003 in Denver, CO (attendance=292); RMAG field course: Influence of Depositional Environment on Coal Stratigraphy, June 2003 (attendance 10); four short courses at AAPG's Annual meeting, May 2003 in Salt Lake City (combined attendance=79); Life Cycle of a Rocky Mountain Gas Prospect: A Canadian-American Perspective, March 2003 (Denver Section Petroleum Society, RMAG, DAPL, DIPS, Denver SPE (attendance 105); Rocky Mountain Energy Technology Conference, April 2003, with IPAMS and GTI (attendance 250), plus two short courses associated with the conference, 26 participants.; RMAG Fall Symposium, Petroleum Systems and Reservoirs of Southwestern Wyoming, September 2003 (attendance 383); Wyoming Geological Association and Rocky Mountain Oilfield Testing Center, Teapot Dome Field Trip, September 2003 (attendance 9)
- *South Midcontinent Region*—co-sponsored five events with Oklahoma Geological Survey; provided partial support for 27 events by Oklahoma's Marginal Well Commission

- *Southwest/Texas Regions*—co-sponsored with others the CEED CO₂ conference (attendance=240)
- *Texas Region*—co-sponsored Coalbed Methane workshop at GCAGS Annual meeting, October 2002 in Austin (attendance=38), co-sponsored 2003 STGS/GCSEPM Research Conference in San Antonio on 4/10/03 (attendance=300), co-sponsored the first technical session for the popular Permian Basin Oil Show (attendance=170), Bob Kiker spoke before the U.S. and Russia Commercial Energy Summit in Houston (attendance=75 at session)
- *West Coast Region*— For 5/22/03 Joint AAPG/SPE meeting in Long Beach, staff coordinated to develop and conduct Independents’ Day during which speakers from several PTTC regions shared examples of independents applying technologies and DOE’s Bill Lawson spoke.

HQ staff also coordinates with other national organizations, including the Drilling Engineering Association, Interstate Oil and Gas Compact Commission, Gas Technology Institute, and technology Consortia (such as the University of Tulsa Separation Technology Consortium). Where topics are perceived to be of direct interest to PTTC’s audience, PTTC may interact with private conference development firms, giving them suggestions regarding topics and speakers and, if invited, even speak.

8. Networking with Large Independents and The Service Sector

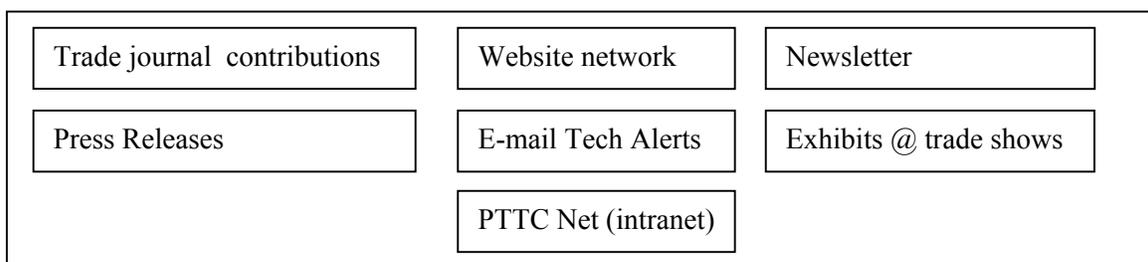
Executive Director Don Duttlinger’s focus has been to increase PTTC’s connections with large independents and the service company sector. This involves determining who the company contacts involved in technical and corporate-level issues are, then meeting with them to discuss their needs and acquaint them with PTTC and its accomplishments. PTTC’s ultimate objective is to determine what adaptations are required to deliver value to these companies, and as value is being delivered, how these companies could provide industry financial support and take full advantage of the established outreach network. The Board is exploring a technology provider committee where input could be gathered from several providers.

Lunch and learn meetings, which began with a Weatherford/Arkansas Oil and Gas Commission effort during FY02, are expanding. The Texas Region has conducted several and plans more. The South Midcontinent Region is now supporting four lunch and learns per year in the Fort Smith, Arkansas area through the Arkansas Oil and Gas Commission. PTTC’s Board will be exposed to a typical lunch and learn presentation during its October 2003 meeting.

C. Implementing a Comprehensive Communications Program

An effective national communications program is essential for increasing name awareness and impact. There are several facets to PTTC’s national communications program, as shown in **Figure 2**.

Figure 2—PTTC’s Multi-Faceted Communications Program



1. Booth/Display

PTTC significantly increased its exhibit activity, staffing its display booth at thirteen events during FY03. Costs are minimized where possible through providing promotional coverage in exchange for exhibit space. There is an intentional focus on exhibiting at relevant meetings in the Houston area since travel costs are not incurred with the HQ office being located there.

- *September 2003*—AAPG APPEX (Houston), Gas Week (Houston)
- *July 2003*—Gulf Coast Prospect Expo (Lafayette)
- *May 2003*—Offshore Technology Conference (Houston), AAPG (Salt Lake City)
- *April 2003*—SPE/ICoTA Coiled Tubing (Houston), PetrisWINDS NOW Partners Expo (Houston), SPE/AAPG/SEG Web-Enabled Technology (Houston)
- *January 2003*—NAPE (Houston)
- *October 2002*—SPE (San Antonio), SEG (Salt Lake City), IPEC (Albuquerque), IPAA (Dallas)

2. Newsletter

PTTC's 16-page national newsletter, *PTTC Network News*, has been published quarterly since 1995. It incorporates feature articles, R&D and technology alerts, field results, and information from DOE's oil and natural gas programs as well as other technology providers. Features added during FY00—state-of-the-art summaries developed by Karl Lang and an environmental page—are ongoing. Through FY03 there are now 14 state-of-the-art summaries that have been developed. Newsletter circulation at year-end FY03 was just above 14,000. The database has expanded significantly during the last couple years as HQ has maintained a strong focus on building connections with industry. The vast majority is from the E&P sector, with more than 60% of those being independents. The three leading states for recipients, in descending order, are Texas, Louisiana, and California.

3. Technology Alert (Broadcast E-mail Service)

In April 2002 PTTC began issuing E-mail Tech Alerts on an approximate three-week frequency. These provide highlights from DOE, PTTC and industry and calendar information about upcoming PTTC and industry events. Past alerts are archived on the website, plus those sent during a quarter are listed in *PTTC Network News*. Those currently on the distribution list are urged to forward to others they think may be interested. People can subscribe through the website or by contacting PTTC. Sixteen alerts were issued during FY03. The distribution list has now grown to more than 4,000. Feedback regarding the Tech Alert has been very positive, as evidenced by the following comment: "I find these among the most valuable broadcasts I receive, delivering distillations of important learnings in areas of interest to me (principally, drilling and wellbore stability). There is no way I could keep up on all this on my own. Keep 'em coming!" Few requests to unsubscribe are received. This has become an important national technology transfer tool and PTTC is focused on building the email distribution list.

4. Press Releases

In its early years, PTTC placed a higher priority on press releases, releasing six or more per year. As PTTC has matured, PTTC is focusing more on expanding its newsletter and email distribution, exhibit schedule, and columns, case studies and articles to promote name recognition. No press releases were issued during FY03.

5. Contributions to Trade Publications

PTTC strives to leverage its outreach through the primary trade publications for independents—*Hart's E&P*, *World Oil*, and *American Oil & Gas Reporter*. PTTC has contributed a monthly Tech Connections column to *American Oil and Gas Reporter* since 2001. As with the regular case studies in *World Oil*, industry feedback has been very positive with the column being frequently mentioned during contacts when exhibiting. Column topics covered during FY03 include:

September 2003 PTTC Delivers Technology Solutions in Various Ways

August 2003 Workshop Helps Operators Understand Reservoir Fluids

July 2003	Sharing Examples of Successful Applications Improves Recovery
June 2003	Appalachian Model Provides Training Method For Well Tenders
May 2003	Viewpoints Vary On Future Of Technology For Oil And Gas
April 2003	Technology Spawns Increased Activity in Mature Kansas Oil Industry
March 2003	Understanding Paraffin Is Necessary First Step To Control Deposition
February 2003	Environmental And Cost Benefits Result From Controlling Water
January 2003	Presidential Paper (by Chairman Clark Southmayd)
January 2003	Natural Fractures Among Keys To Developing Unconventional Gas
December 2002	E&P Industry Makes Demonstrable Progress In Protecting Environment
November 2002	PTTC's Travels Illustrate How Technology Moves Thru Industry
October 2002	Underbalanced Drilling Adds Reserves, While Tools Find Other Applications

When invited, PTTC also contributes other columns or articles to trade journals. Lance Cole honored a request from the *Reporter* and developed an additional article on Improved Oil Recovery.

6. Website

Launched in 1995, PTTC's national website (www.pttc.org) provides key content of national interest and links the network of 10 regional and 3 satellite websites. It contains organizational information, a calendar of PTTC events, technical summaries, publications, press releases, and selected links with descriptions of producer associations, and more. By serving as the gateway to the regional websites where extensive data, case studies and other technical information is contained, the website provides a valuable service to independents. It also provides a venue for special announcements, promotion of new products, and posting surveys. PTTC continued to place workshop summaries (*Solutions From the Field*), newsletters, links to *Digest* case studies, E-mail alerts and other technical articles on the website. There is also a strong focus on maintaining a current calendar of PTTC and other industry events with links to detailed information on the Internet.

In spring and summer 2001, PTTC enhanced its entire website network—national, 10 regions and satellite sites—to improve the content, user-friendliness and aesthetics. Much greater consistency was achieved without sacrificing regional flexibility. Routine updating and maintenance remain a challenge, especially for the regions where webmaster resources are often limited. Since 1998 PTTC (and the regions) have been using WebTrends™ software to monitor website usage. **Figure 3** (see next page) illustrates that Page Views and User Sessions for the national website continue consistent growth, now averaging more than 14,000 user sessions or visits per month.

7. Board and RLO Communications--PTTC Net

PTTC's intranet site, PTTC Net, continues to make Board and RLO information available in a timely fashion. It is accessible by both Board members and RLO staff by user name and password. It provides ready access to roster and contact information, quarterly and annual reports, and policies and guidelines. This provides an important filing function for all. For RLO staff, it serves administrative functions, such as deliverables, reporting forms, and annual planning information. When staff changes occur, this represents a ready reference point to familiarize them with the internal workings of PTTC.

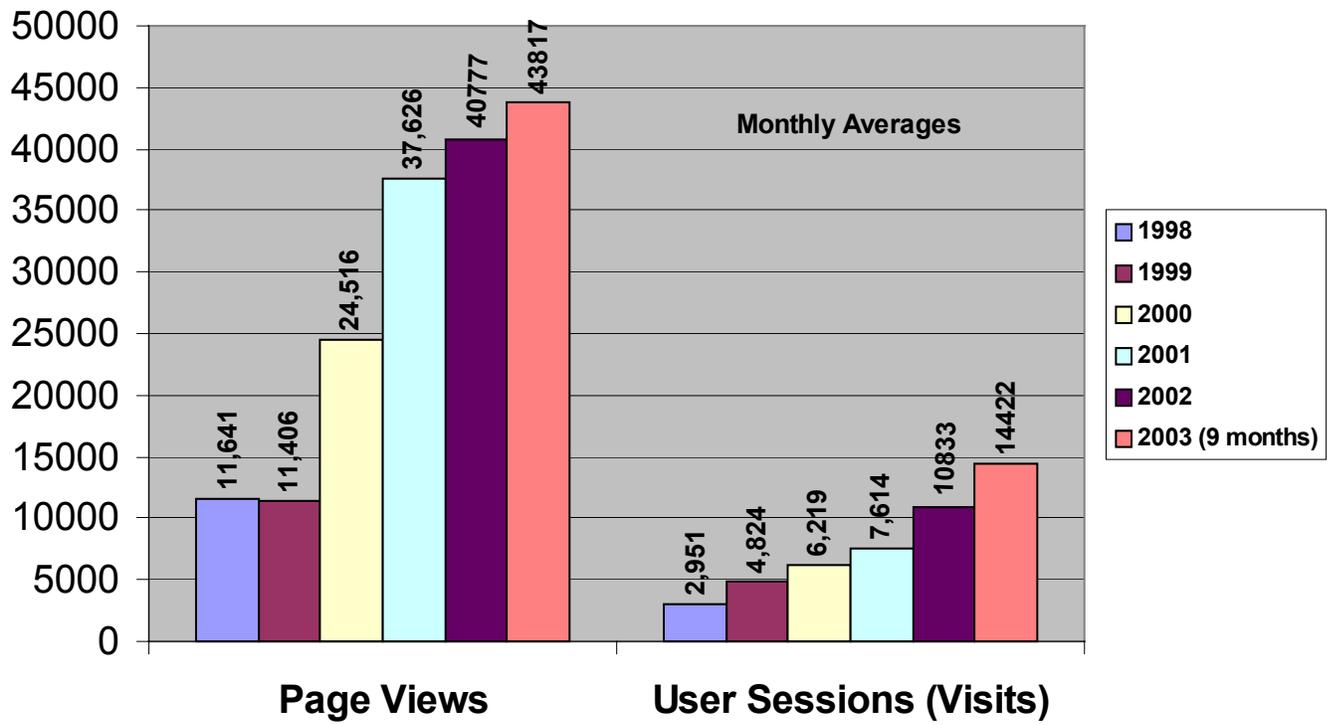


Figure 3—Usage Trends for National Website (www.pttc.org)

III. RESULTS AT THE REGIONAL LEVEL

PTTC's ten regions are the primary delivery mechanism for technology transfer. It is in the regions where PTTC connects most directly with independents—through workshops, resource centers, websites, newsletters, personal contacts, and other information sources.

Table 2 documents FY03 activity by region. Strict regional comparisons are discouraged because differences among regions are influenced by a variety of factors, including: (1) differing guidance from regional Producer Advisory Groups (PAGs), (2) single- versus multi-state regions, (3) differing industry demographics, and (4) differing RLO Director philosophies. Notwithstanding, it is apparent that activity levels in some regions are significantly higher than in others. **Figure 4** presents regional activity for recent years, allowing one to see trends within and among regions. The large contributions from the Rocky Mountain and South Midcontinent regions are obvious. It is significant though that seven of 10 regions did conduct more than 10 workshops per year. Contact levels vary widely among the regions, reflecting different activity levels and the difficulty in consistent reporting of contact statistics.

Table 2—FY03 Regional Activity

Region	Workshops					Contacts	Website User Sessions	Newsletter
	# of WS's	Total Attend.	Avg. Attend.	% from Industry	% Repeat Attend.		1 st Qtr / 4 th Qtr	
Appalachian	13	948	73	87	47	4,236	4,356 / 5,096	Online newsletter
Central Gulf	7	620	89	90	28	883	3,700 / 4,375	Info/columns In Assoc. NL
Eastern Gulf	9	529	59	86	47	890	2,879 / 3,590	600 (Qtrly)
Midwest	8	456	57	74	76	5,551	3,981 / 5,184	3,000 (Semi)
N. Midcontinent	13	608	47	77	55	3,009	19,406 / 19,930	4,938 (Semi)
Rocky Mountain	42	2,116	50	88	65	2,763	4,211 / 3,754	2,104 (Qtrly)
S. Midcontinent	40	1,300	33	88	42	1,361	NA/458	5,000+ (Qtrly)
Southwest (plus 1 w TX)	11	402	37	85	16	796	14,891 / 17,584	3,400 (Semi) + online
Texas (plus 4 w SW/CG)	12	1,054	88	92	29	4,674 + TIPRO	4,856 / 7,248 + TIPRO	1,580 (Qtrly) + Assoc.
West Coast	14	583	46	66	79	396	1,727 / 1,961	Info. In CIPA weekly
All Regions	169	8,616	51	85	50 (calc.) 52 (avg.)	24,714	60,007/69,180	

Website usage varies significantly among the regions, reflecting: (1) size of the industry audience, (2) regional emphasis on the website, and (3) website content, particularly O&G data. Usage increased, although in some cases modestly, comparing 1st and 4th Qtr user sessions.

Figure 4—RLO Historical Activity

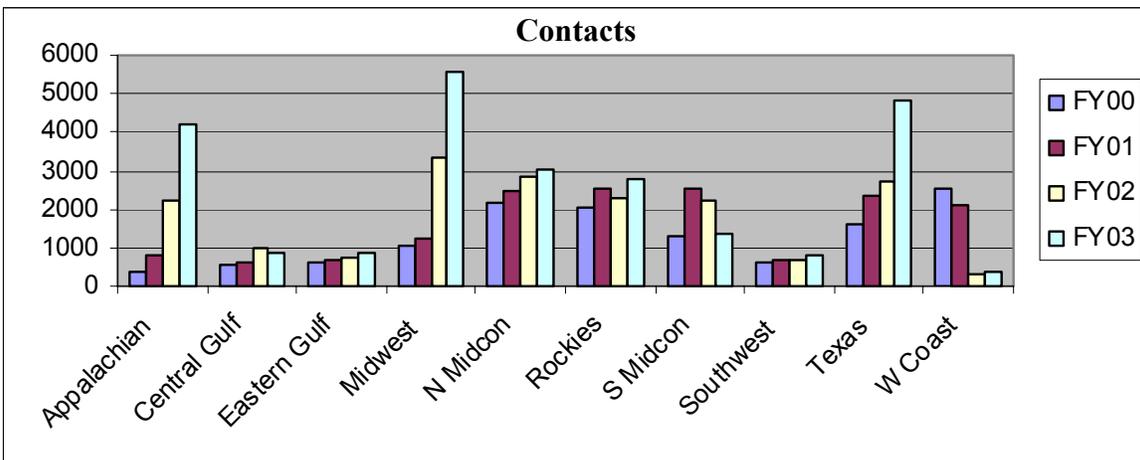
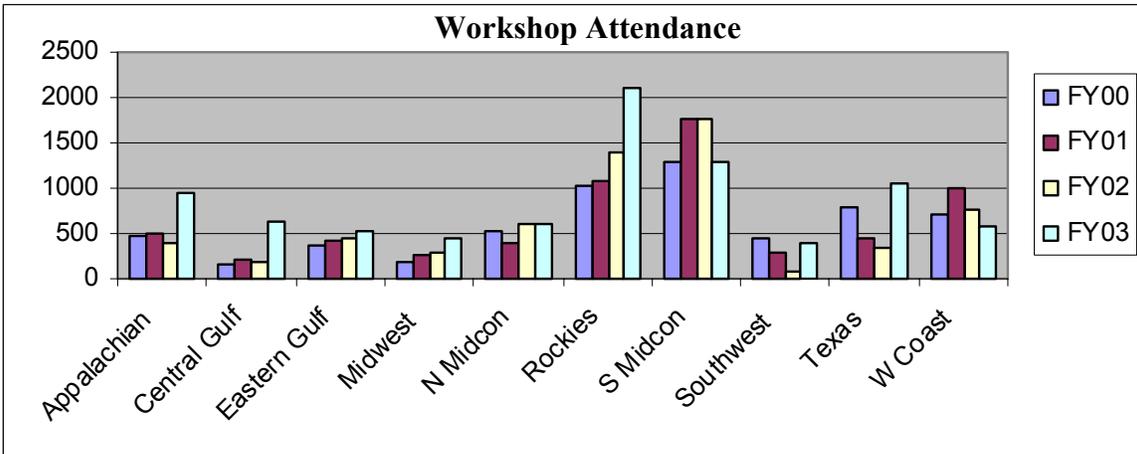
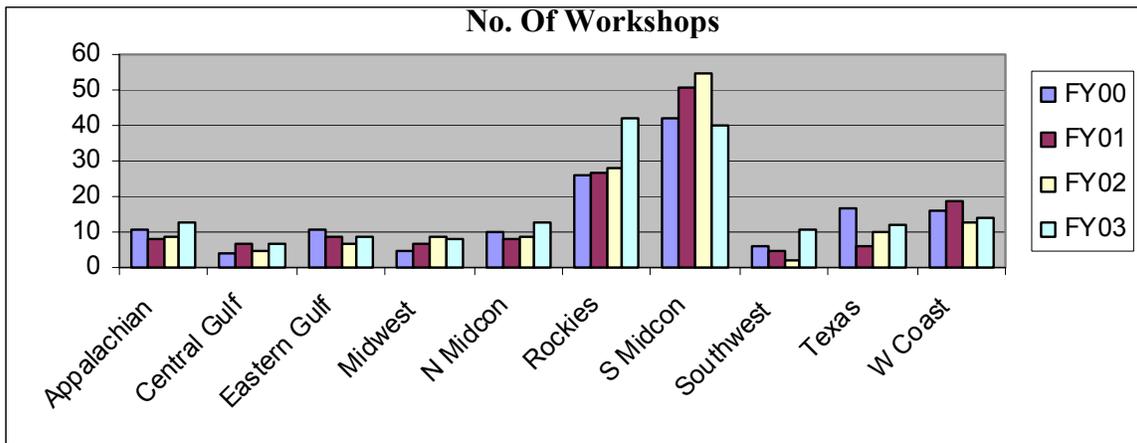


Table 3 illustrates activity levels during the most current quarter (4th Qtr FY03) and compares overall activity with FY02 levels. Activity levels exceeded prior record levels.

Table 3—4th Quarter FY03 Activities Overall Comparison with FY02 Activity Level

Region	Workshops			Industry Contacts	Website (mo. avg.)		Newsletter Function
	No.	Attend.	From E&P Industry (%)		User Session	Page Views	
Appalachian	6	459	422 (92%)	1,226	5,096	10,327	Online newsletter—Aug 2003
Central Gulf	1	19	14 (74%)	171	4,375	9,485	LIOGA newsletters—July 2003, circ. 923
Eastern Gulf	2	35	28 (80%)	242	3,590	4,854	Qtrly newsletter—early Oct 2003, circ. 600 95% ind.
Midwest	1	37	23 (63%)	1,442	5,184	9,828	Semi-annual newsletter—May 2003, circ 2800
N. Midcontinent	5	329	291 (88%)	828	19,930	66,714	Semi-annual newsletter—Jan 2003, circ. 4938
Rocky Mountain	5	422	335 (79%)	610	3,754	10,862	Qtrly newsletter – (8/03) circ. 2104 (7% electronic)
S. Midcontinent (Includes PUMP)	9	319	294 (92%)	321	458		Qtrly newsletter – July 2003, broad mailings
Southwest	1	22	19 (86%)	158	17,584	65,632	Column in semi-annual PRRC newsletter; not this quarter, plus online
Texas	4	80	79 (96%)	1,029 (927 TIPRO)	7,248 (181,886 Outreach)	31,258 (289,153 Outreach)	Qtrly newsletter-July 2003, circ. 2000; assoc. newsletters, SPE Permian Basin, Midland paper
West Coast (Includes PUMP)	4	126	71 (56%)	99	1,961	6,067	Announcements in CIPA’s weekly email
All Regions 4th Qtr	38	1,848	1,576 (85%)	6,126	69,180	215,027	
FY03 (3 qtrs)	131	6,768	5,759 (85%)	18,588			
All Regions FY02 Total	147	6,243	5,177 (83%)	18,377	FY03 versus FY02		
FY03 Total	169	8,616	7,335 (85%)	24,714	-- 15 % increase in # of workshops -- 38 % increase in attendance -- 34 % increase in contacts		

While recognizing that there are different tools and approaches to satisfy different needs throughout the country, each of PTTC’s regions performs the following core technology transfer functions as a minimum level of effort. These include:

- *Technology workshops*—quarterly or more often (averaged 14 per month during FY03)
- *Problem identification*—now relying primarily on feedback from workshop attendees and contacts
- *Resource centers*—mostly virtual, responding to inquiries and developing products
- *Internet*—basic calendar and technical information, O&G data, emphasis varies by region
- *Newsletter*—regional newsletter or regular columns/announcements in association newsletters

A. Technology Workshops

Activity level increased 15% versus FY02, while attendance of 8,616 represents a 38% increase. There are some large co-sponsored events, but the higher attendance also reflects some very successful regional events. Examples include the well tender workshops in the Appalachian Region and the horizontal drilling workshop in Michigan. The regions draw a high percentage of attendees from industry with values ranging from 56% to 96%. Of 145 workshops in FY03 where repeat attendance was reported, it averaged 52% (50% overall calculated), ranging from 28 to 79%. Repeat attendance is lower than prior years as might be expected with a significant increase in overall attendance. The percentages still reflect customer satisfaction in that producers are coming back. Repeat attendance is measured as the % of industry attendees that had previously attended a workshop in that region.

B. Problem Identification

Primary sources for industry input regarding the topics of interest in the region are: (1) feedback from workshop participants, (2) trends apparent from inquiries and informal contacts at the resource center, and (3) insights from the PAG. Occasionally, the regions have used surveys. Several regions, including Central Gulf, Midwest, North Midcontinent and Southwest, proactively visit producers to learn their needs. Interactions through the PUMP project in Oklahoma and Arkansas are providing the South Midcontinent with insights regarding key production issues. The West Coast Trouble Shooters program provides a unique opportunity to learn what industry's needs are, as do the PUMP work groups now focused on produced water issues. As the Permian Basin Mentor, Bob Kiker gains key insights on the needs of independents there and across Texas. RLO staff maintains close ties with producer associations in most regions.

The Trenton-Black River Play in the Appalachian Region is one of the most active gas plays in the domestic U.S. Late in FY02, the Appalachian Region hosted a "Trenton stakeholders" meeting to identify R&D needs for this emerging play. Staff from regional geological surveys outlined a potential R&D plan, then listened and incorporated additional industry thoughts. Thoughts were later incorporated into a successful R&D proposal to DOE.

C. Resource Centers

Resource center operations are the hub from which PTTC generates most of its regional products and services, including: (1) access to information/data, (2) response to inquiries, (3) upstream software demo/training, (4) information products, (5) special purpose databases, and (6) other outreach efforts. Among the regions, three regions could be said to have satellite centers (Midwest with its Michigan outreach through Bill Harrison at Western Michigan University, Eastern Gulf with its website/outreach with the Mississippi Office of Geology in Jackson, and Texas with its Mentor in the Permian Basin).

1. Access to Information/Data

All resource centers provide access to basic information, data resources and libraries. Information resources are also available through the parent RLO organizations.

2. Response to Inquiries

Industry contacts are now approaching 10 per region per working day. Contact level varies widely among the regions reflecting differences in the regional audiences, differing activity levels among the regions, and differing outreach philosophies among the RLOs. By far the largest percentage of contacts is for calendar/event information, followed by basic oil and gas data/statistics. It is estimated that 10-20% of the inquiries are true technical inquiries that require some research to develop an appropriate response. For these, the time required varies from a couple hours to a couple days. Beyond that level, referrals are made to appropriate consultants. Many of the responses involve connections to other individuals or organizations.

3. Upstream Software Demo/Training

Nearly all regions conduct workshops dealing with various aspects of Internet/data access resources. All resource centers have donated technical software available for demonstration to interested parties, but only five of 10 regions conducted specific software training during FY03. The Rocky Mountain Region maintains an extensive software training schedule, holding 20 software workshops and seven simulation users group meetings during FY03. There, additional financial support from other sources makes a software-training center viable and its very active schedule possible. Other regions that conducted a few software workshops are Eastern Gulf, Midwest, North Midcontinent and Texas.

4. Information Products

Selected regions have developed information products to meet industry needs. Among the regions, the Central Gulf Region has the longest history of product development, most notably the Louisiana Desktop Well Reference (LDWR) CD-ROM of well/lease data. Its success spurred the state agency to make the data available through the Internet in its SONRIS system. LDWR is still updated since it has some advantages compared to SONRIS, and there is discussion about developing pre-1977 data, which would be a major advance. The Midwest Region and the Illinois State Geological Survey are developing base and custom mapping products. Working with other organizations in New Mexico, the Southwest Region developed a New Mexico Well Location CD, which was updated during FY03. It also provides a CD of information presented in the Mesa Verde workshop.

5. Special Purpose Databases

Data access has always been high priority for independent operators. Most regions work hard to provide electronic data access through regional websites. The North Midcontinent and Southwest regions have a particularly strong digital data emphasis. In Kansas the Kansas Geological Survey leads the database effort, though major case study postings resulted from the North Midcontinent Region's PTTC case study effort this year. A recent valued addition in New Mexico is the State Lands database/website. New Mexico's OCD will be making more data available on the Internet in the near future. Staff continues to work with OCD to make the database/Internet systems user friendly. Southwest Region staff also continues to improve data products by allowing for more summaries (totals for fields or formations or operators)

. In the Eastern Gulf Region, a Mississippi geological-oriented website that would not be possible without regional support makes Mississippi data available to operators. In Louisiana the Central Gulf Region influences and promotes the state's SONRIS system, plus it is keeping the LDWR updated, including consideration of adding pre-1977 data. The Midwest Region continues to expand its Illinois Basin core and waterflood database. Longer term, these may become revenue-generating products. The Midwest's Michigan outreach center places a strong focus on making Michigan data online. In the Appalachian Region, staff has developed databases for horizontal, coalbed methane and Trenton-Black River activity that are available online in a GIS environment.

In summer 2001, the Rocky Mountain Region implemented a Data Exchange Network through its website. Purpose is to facilitate the capture and sharing of data "languishing in file rooms and basements." Usage has not grown as anticipated and the industry partner has changed the software used, so staff is evaluating the next step. Staff is exploring working with geological surveys to make portions of their core listings available to draw increased traffic.

The Bureau of Economic Geology recently developed an online searchable database of all geologic and geophysical materials stored at BEG, representing more than 225,000 well logs, 630,000 boxes of core, and 660,000 boxes of cuttings. Reports show that a significant number of people are accessing this online product (<http://begdb1.beg.utexas.edu/Igor>). Although not a PTTC product, it is a valuable database benefiting industry.

6. Other Outreach Efforts

Beyond responding to inquiries, selected regions implement special outreach programs. It has been noted that the Central Gulf, Midwest, North Midcontinent and Southwest regions make targeted visits to producers throughout their region. In the West Coast, the Trouble Shooters program provides personalized assistance to interested operators. Ongoing work in California within PTTC's PUMP project provides opportunities for one-on-one and small group interactions. In the West Coast and Rocky Mountain regions, student education programs (COMET in California and Futures In Energy in the Rockies) that receive PTTC support encourage student internships with independents. California's COMET program has existed for several years, while FY03 will be the second year for the Rockies Futures in Energy program.

The online discussion forum recently implemented by the Texas Region serves as electronic outreach. Webmaster Steve Kirk with TIPRO recently added ListServ capabilities for broadcasting targeted emails to specific lists, including a PAG Member ListServ that has already improved communication among the PAG. Through TIPRO's Internet outreach, he continues to market and administrate online outreach to many oil and gas websites and webmasters in Texas.

North Midcontinent staff continues to support the Kansas CO₂ initiative, working closely with the Tertiary Oil Recovery Project at the University of Kansas. The Central Gulf Region continues to provide modest support for LSU's Downhole Water Sink Consortium. Dr. Wojtanowicz, who leads this program at LSU, is serving as an SPE Distinguished Lecturer during 2003-2004. South Midcontinent staff works closely with Oklahoma's Marginal Well Commission supporting their Trade Fairs as well as providing financial support for their workshop program. In the Permian Basin, Bob Kiker is extremely well networked with professional societies, other technical groups and the press.

Martha Cather, Coordinator for the Southwest Region, leverages her role in leading New Mexico Tech's Industry Service and Outreach Group for PTTC's benefit. She has been particularly active in a variety of efforts related to produced water issues in New Mexico. Currently there are DOE-funded projects in both major producing regions of the state. She has spoken with many producers about the various issues involved. Another outreach effort, also in conjunction with a DOE project, has involved discussions with producers, especially in southeast New Mexico, concerning issues of corrosion and scale. The staff's work with the NM State Land Office was also in direct response to a request from producers. Additional outreach resulted from the H₂S safety seminars that PTTC co-sponsored in conjunction with WERC and the NM OCD. Robert Lee's membership on the NM Oil Conservation Commission enables him to become very familiar with producer issues in the state.

All RLO Directors are active in professional societies appropriate for their discipline, several at the national/international level. Appalachian Region Director Doug Patchen played a lead role in the Joint AAPG/SPE Eastern Regional meeting in Pittsburgh in September 2003. West Coast Region Director Iraj Ershaghi organized Independents' Day for the Joint AAPG/SPE meeting in Long Beach in May 2003. Representatives from several regions made presentations there to promote inter-regional tech transfer. Similar multi-regional presentations are planned for AAPG's Midcontinent Section meeting in Tulsa in October 2003 and the SPE/DOE IOR Symposium in Tulsa in April 2004.

The RLOs will typically exhibit at producer association meetings in their regions, and some exhibit at national society meetings. Exhibits may be for PTTC alone or in combination with their parent organization.

D. Internet

The regional websites are an evolutionary product continually undergoing refinement and expansion. Traffic levels vary significantly by region, depending upon regional emphasis, data/content and demographics of the regional audience. Overall, current traffic is about 69,000 user sessions per quarter. This does not include usage of the Michigan and Mississippi satellite websites where WebTrends™ software cannot be used, or the high traffic volume of Texas's TIPRO outreach (nearing 200,000 user sessions per month). Eight of 10 regions recorded an increase comparing 4th to 1st Qtr FY03 usage. Usage in some regions appears to have peaked, but history indicates that when there are major content additions such as databases or GIS-oriented data growth

spurts can occur. When RLO staff looks at web traffic detail, they are able to determine what users view, which influences decisions about where to allocate future website effort. It is significant that several of the regions with smaller audiences still draw traffic over 4,000 user sessions per month.

Three regions draw significantly higher traffic—North Midcontinent, Southwest, and Texas when one includes the technology-related Internet outreach by TIPRO. A strong digital data emphasis is the common denominator for the North Midcontinent and Southwest regions, while Texas statistics reflect the large audience interested in Texas information. Texas began an online discussion forum late in FY03, which if successful will stimulate further usage of the Texas regional website and provide insights leading to future workshops or even Topical Working Groups.

E. Newsletters

Despite the digital revolution, PTTC recognizes that a good portion of its audience relies on printed material, so a newsletter function is still considered a core technology transfer function that each region must fulfill, through either a regional newsletter or regular columns/announcements in association newsletters. Seven of 10 regions have a printed newsletter, most of which are also placed online. The Appalachian Region relies solely on a lengthy online newsletter. The Central Gulf and West Coast regions rely on announcements in association communications. Of the printed newsletters, four are quarterly and three are semi-annual (Midwest, North Midcontinent and Southwest). Combined distribution of the regional newsletters is about 20,000. Several regions promote or advertise regional events in operator association or society newsletters. Funding realities dictate that PTTC tightly control newsletter expenses. Regions periodically review and pare down their mailing lists and distribution via E-mail is encouraged, although few in industry yet choose this option.

F. Regional Success Anecdotes

The most direct measure of regional success is the percent of respondents who answer “Yes” to the question: *Have you used technology you learned about through PTTC?* Overall, 39% of respondents say “Yes” without about half providing at least cryptic details. Without extensive follow-up, comments are sufficient to quantitatively estimate impact. Percentages by region range from 24 to 45% range.

PTTC has documented success anecdotes, included as **Table 4**, of industry taking action with information they received at least partially through PTTC. Similar anecdotes have been documented in earlier years. Although finding it difficult to develop the methodology to quantitatively document total impact, PTTC has confidence that industry is taking action and reaping economic benefits far outweighing the invested Federal, state and industry funds.

Table 4—Application Anecdotes of Industry Applying Technology

PTTC Region (Subject area/benefit)	Bottom Line Description
Appalachian (Play-Based)	The Trenton-Black River play in the Appalachian Region is one of the hottest plays in the country. Early on, PTTC’s Appalachian Region decided to become a knowledge leader. The region has delivered six workshops in four states presenting geological and engineering information, and, in West Virginia, permitting activity increased following workshops. A Trenton stakeholders meeting in late FY02 helped identify R&D needs supporting play development, and led to a successful research proposal requiring monetary contributions from industry partners being submitted to DOE. .

PTTC Region (Subject area/benefit)	Bottom Line Description
Central Gulf (Online Information System)	Louisiana’s Department of Natural Resources (DNR) Strategic Online Natural Resources Information System (SONRIS) has become a very important data source. Not only does the system allow the producers to process their permitting online, it provides users the ability to access a variety of information on natural resources, including oil and gas drilling, well, production data and coastal information. The system contains most of the well logs in the State and these can be downloaded free of charge. PTTC organized four workshops on the SONRIS system
Eastern Gulf (Play-Based)	Play-based workshops are known to have influenced industry. Speakers from a “Smackover Reef” workshop have met with operators in Texas and Mississippi to review specific projects. Data from the “Norphlet” workshop has been used for onshore exploration. Exploration objectives have been targeted in Lower Cretaceous carbonates (James Limestone) based on information presented at the November 2002 workshop. Prospects are also known to have occurred because of the Tuscaloosa Marine Shale workshop, the idea for which came from an independent.
Midwest (Horizontal/ Underbalanced drilling)	Deep Rock Energy used 3-D seismic and horizontal/underbalanced drilling in a recent discovery of a Devonian carbonate reservoir in Illinois. The discovery produced in excess of 3,000 Bopd, becoming the best well drilled in Illinois in the last several decades. The prospect generator attended regional workshops on both 3-D seismic and horizontal/underbalanced drilling. In conjunction with the Illinois Geological Survey, the RLO has expanded the Interactive Map Web Service that was supported by a DOE PUMP II grant. Operators can now go to any Illinois field and determine pay zones, waterflood zones, well names, status, and much more.
North Midcontinent (Polymer Gels)	Through its affiliation with TORP, the North Midcontinent Region has transferred information about polymer gel treatments for controlling water production through several events in recent years. Recent focus has been on larger volume treatments in the Arbuckle. In FY03 a Polymer Forum session consisting of operators who had conducted treatments, gel polymer service providers and university scientists stimulated interaction and data sharing. This led to a later public workshop during FY03. These activities are partially responsible for a “boom” of polymer treatments with over 300 wells being treated, resulting in a significant reduction in the volume of water being produced and several million barrels of incremental oil recovery.
Rocky Mountain (GeoPlus PETRA software training)	Participants have described the value (www.pttc.org/impact/impact_software.htm) of GeoPlus PETRA training in a variety of ways including: saves many hours getting up to speed, at least 40 hrs at \$50 per hour; productivity improved an order of magnitude; productivity improved 4-fold at least. Attendees have reported that local availability of PTTC training saved \$1,000 - \$2,000 in the case of informal (on-the-job) training and \$2,000 - \$3,000 in direct costs for formal training, plus the cost of additional time away from the office required for an out-of-town course. One participant estimated the value of PETRA software and PTTC’s training at up to 5% of a project’s budget.
South Midcontinent (Hunton exploitation)	Application of lessons learned in four Hunton play-based workshops has resulted in significant production and economic benefits. A sampling of attendees (25% of total, selected at random) revealed that 26 new wells and eight recompletions were developed by workshop participants (www.pttc.org/impact/impact_new.htm) using workshop data. One recompletion extended the economic life of a well 5-10 years. Additional new wells were planned or in progress. Data were used to avoid dry holes. Service companies realized an estimated \$12 million of business. Producers realized an estimated \$18 million of present value profit (over the \$12 million investment). Total impact on the Oklahoma economy is estimated at more than \$29 million when economic multiplier effects are considered.

PTTC Region (Subject area/benefit)	Bottom Line Description
Southwest (Produced Water)	Interest in produced water problems continues to mount in New Mexico. The PRRC is currently participating in numerous projects to address this issue, including a newly funded (May '03) project with Sandia National Labs to assess produced water quality and quantity in the San Juan and Raton Basins. Data collected from the various projects at PRRC are being used by PNM to develop a plan to use produced water in cooling of their generating station in the San Juan Basin.
Texas (Polyethylene Liners)	Feedback from Western Falcon indicates that an increasing number of companies are using polyethylene liners to assist them in reducing wellbore tubular failures due to corrosion and mechanical wear. Initially presented in the wellbore management workshops, information has also been incorporated in a case study in <i>Petroleum Technology Digest</i> , in the Produced Water & Associated Issues workshops, and on the national website. This exposure, combined with sound marketing and continued success in field applications, has led to a 280% increase (www.pttc.org/impact/impact_connecting.htm) in Western Falcon's customer base, the vast majority of which are small independents.
West Coast (Pump-Off Controllers)	Through a workshop in December 2002 and a forum on cost reduction held on April 17, 2003, staff worked closely with Global Energy Partners to locate, guide and help a number of producers install rod pump off controllers and take other corrective measures to reduce power consumption and thus lower their operating expenses.
National (<i>Petroleum Technology Digest</i>)	J&J Solutions offers an automated soapstick launcher that helps keep gas wells unloaded. After first learning of the launcher during the Oklahoma Marginal Well Commission Trade Fair during spring 2002, PTTC worked with J&J to get a case study developed and published in the <i>Petroleum Technology Digest</i> in September 2002. This exposure generated new business, which has led to a significant business expansion—new hires, new products, and penetrating the international market. J&J notes that the case study “really opened a lot of doors for us. It gave the launcher credibility, enabled us to “fly” and implement all the positive changes.”

Appalachian—The region is recognized as the technology transfer center for information about the high interest Trenton-Black River play. GIS-oriented databases for horizontal, coalbed methane and Trenton-Black River activity are a valuable industry resource. An Intranet containing research results of the new Trenton-Black River Research Consortium will be added to the website after the project ends.

Central Gulf— The region has been working with the Louisiana Department of Natural Resources (DNR) to bring the SONRIS system to the attention of independents. The region continues to update the Louisiana Desktop Well Reference since it has some advantages not offered by SONRIS. Minor financial support continues to leverage results of LSU's Downhole Water Sink (DWS) Consortium. The region cooperates with both the Texas and Eastern Gulf regions on activities of mutual interest.

Eastern Gulf—The geological community relies heavily on regional workshops, including the region's cooperation this year with the Mississippi Geological Society's spring symposium. The region also works with the Mississippi State Board of Registered Professional Geologists, enabling geologists to earn required CEU credits. Extensive Mississippi geological information now online would not be there without PTTC support.

Midwest—Independents utilize the regional workshops as a major source of information on technologies that can be applied to the Illinois and Michigan Basins. Both the Michigan satellite and the RLO have websites loaded with pertinent local data. The RLO works closely with local trade and professional associations to present joint workshops on topics of interest, blending new technology developments with local case studies. The Michigan satellite provides a very effective means for maintaining a PTTC presence there, thanks to the efforts of Bill and Linda Harrison at Western Michigan University.

North Midcontinent—Success is measured by operators applying technologies to which they are exposed. Application helps keep marginal wells producing economically. Technologies that operators in Kansas are learning about and applying include polymer gels, GasGunSM stimulations, 3-D seismic and coalbed methane. The data available through PTTC supported website activities are viewed as a major asset for operators conducting business in this region.

Rocky Mountain—The region maintains both a highly active technology workshop, often through co-sponsoring, and software training schedule. Fifty-two events drew 2,116 attendees, which represents 25% of total regional attendance. Software training covers desktop applications, GeoPlus PETRA, GeoGraphix, Seismic MicroTechnology products, DigiRule, Rockware and others. With industry support and co-sponsorship by other organizations, the region successfully launched the Futures in Energy program. The Region also coordinates the Denver Simulation Users Group Meetings and hosts the group's library of input files on the regional website.

South Midcontinent—The region leverages workshop funding by supporting the field-oriented workshop program of Oklahoma's Marginal Well Commission (MWC). MWC alone conducted 27 workshops during FY03. The region also supported several technology workshops developed by the Oklahoma Geological Survey, including eight PUMP-related workshops on "Produced Water and Associated Issues." Staff maintains strong ties with the Tulsa and Oklahoma City geological societies, is strengthening connections with SPE sections, and has expanded the workshop effort in Arkansas.

Southwest— Indicators of success are: (1) the abundant O&G data placed online, evidenced by sales of the New Mexico Well Location CD v 2.0 (sales=250+ this year), and the popularity of the Electronic Resources in New Mexico series of workshops (five so far) and the success of the new State Land Office data pages, (2) the region's ability to develop, through its parent organization, work efforts and proposals based on problems defined by operators, and (3) timely special topics, such as the Mesa Verde workshop and planned workshops on produced water management issues.

Texas—The region continued to leverage Bob Kiker's effort in the wellbore management arena and the Produced Water Manual developed within PTTC's PUMP project. He developed two chapters of the manual and has participated in workshops in Arkansas, Michigan, Ohio, Oklahoma, and Texas. Support continues for the CEED CO₂ conference, a major event in the Permian Basin. Staff is increasing Gulf Coast outreach through sponsoring events at BEG's core facility in Houston. Lunch and learns are increasingly being used. During FY04 staff will explore Topical Working Groups as an avenue for industry sharing data and insights. Staff and PAG members alike will be involved. Activity should generate information for future workshops.

West Coast—The Region successfully obtained funding from California Energy Commission to supplement the available funding from its DOE-funded PUMP project for a comprehensive study of water production in California oilfields. A number of produces are participating in the field studies. Staff effectively incorporates DOE R&D results and personnel in workshop agendas. Through cooperative activities, Alaska receives some support.

G. Planning and Managing Each Regional Program

PAGs provide key input and direction for regional programs. Within the constraints of maintaining the core technology transfer functions, considerable flexibility is allowed the PAGs/RLOs to accomplish the regional program. PAGs provide guidance on strategic redirections, if needed, to better serve the regional audience and they approve the general topics for most of the workshops planned during the coming year. They, along with the RLO Directors, determine relative emphasis of different elements of the PTTC program. HQ staff interacts extensively with both the PAGs and the RLO Directors during the annual planning process. During the year, HQ interactions are primarily with the RLO Directors. It is HQ's responsibility to see that regional activity during the year remains within the loosely defined boundaries of the annual plan. Regional PAGs typically meet three times per year with most meetings occurring via conference call. One of those meetings occurs in the August

time frame when the PAGs guide and approve the region's annual plan and budget. PAG approval is subject to Board confirmation.

Staffing approaches vary by region. RLO Director roles vary from a managerial role to involvement in day-to-day details. Some regions spread the PTTC workload among several staff part-time, while others accomplish the work with only a few dedicated people. Both approaches have proven effective. Regional responsibilities include having to submit to HQ on a timely basis the required reports, invoices, workshop notebooks, and other information and deliverables. Financial management requires discipline. HQ is responsive to those regions that encounter unforeseen financial needs during the year. This flexibility has enabled PTTC to seize several opportunities.

PTTC's National Organizational Milestones

1993

- November—PTTC incorporated as national, not-for-profit organization
 - November—Founding Board of Directors meets (New Orleans, LA). Jim Russell voted Chair, Gene Ames, Jr. as Vice Chair, and Deborah Rowell as Executive Director
 - December—Initial meetings of Producer Advisory Groups (PAGs)
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1994

- January—Phase I funding from DOE/BDM begins.
 - January—All ten PAGs formed, Chair and Vice Chair elected in each region
 - February—First meeting of Permanent Board of Directors (Washington, DC). Same officers elected as by Founding Board.
 - March—Headquarters staff make visits to potential Regional Lead Organizations (RLOs)
 - March—Board adopts bylaws, elects Nominating Committee and members of Management and Budget (M&B) Committee. First M&B meeting held. (Dallas, TX)
 - April—First meeting of RLO Directors (Tulsa, OK)
 - May—First PTTC technical session at IPAA meeting (San Francisco, CA).
 - May—Office space obtained for national PTTC Headquarters (HQ) – Separate from IPAA
 - June—HQ staff hired
 - July—HQ establishes accounting system and database separate from IPAA
 - August—PTTC participates for first time in DOE oil program contractors review
 - September—PTTC submits 5-year Master Plan to DOE as main Phase I deliverable
 - September—PTTC's first national exhibit at conference - SPE annual meeting
 - October—Tax-exempt status approved by IRS.
 - November—Board conducts first (annual) strategic planning session (Phoenix, AZ)
 - November—Phase II funding from DOE/BDM begins
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1995

- January—First annual audit of HQ financial systems
- February—First joint meeting of PTTC Board and RLO Directors (Norman, OK). Election of officers (Chris Hall voted Chair and Bob Nance as Vice Chair)
- March—Contract signed with first RLO (North Midcontinent)
- March—First issue of "PTTC Network News" published as national quarterly newsletter
- April—PTTC participates for first time in DOE natural gas contractors review
- May—PTTC Board meeting includes discussions with IPAA leaders about lack of industry support for DOE oil and gas technology programs
- June—National website went online
- July—One year funding begins from Gas Research Institute for HQ activities
- July—PTTC Chair Chris Hall leads Washington meeting with DOE officials to confirm industry support for oil and gas technology programs
- August—RLO staff meet to discuss coordinating PTTC websites (Albuquerque, NM)
- December—HQ ended consulting contract with ICF Resources for technical assistance related to establishing new organization.

1996

- January—PTTC presents preliminary problem identification results to DOE meeting with National Petroleum Council R&D Task Force members (Washington, DC)
 - March—Election of officers (Bob Nance voted Chair and Leo Schrider as Vice Chair) (Tuscaloosa, AL)
 - March—Problem Identification Report published based on series of workshops
 - April—Executive Director begins monthly conference calls with M&B Committee
 - May—PTTC Chair Bob Nance added as member of IPAA Program Committee
 - June—Board meets in Washington and issues first long-run strategic plan. Conducts first group visits to Capitol Hill.
 - July—Contract signed with tenth/final RLO (West Coast)
 - July—RLO Directors and HQ staff meet with DOE officials in Morgantown, WV
 - October—HQ expands technical coverage in “PTTC Network News” (from 8 to 16 pages)
 - November—Board ratifies updated bylaws. Adds 3 representatives from professional societies
 - November—DOE announces that its new outreach areas will be same as PTTC’s 10 regions
 - December—Final regional resource center opened (West Coast)
 - December—PTTC wins Honorable Mention award in contest for Organizational Excellence by American Society of Association Executives (ASAE)
 - December—RLO Directors meet with DOE Outreach Team Leaders (Washington, DC)
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1997

- January—PTTC signs cooperative agreement with AAPG to conduct joint workshops
 - February—RLO staff meet to coordinate training on E&P software donated by industry (Golden, CO)
 - April—PTTC Chair Bob Nance gives presentation on industry needs at meeting of President’s Committee of Advisors on Science and Technology (Dallas)
 - May—PTTC releases “Best of PTTC Workshops” report
 - May—PTTC wins R&D award from National Energy Resources Organization
 - July—Board adopts new policies and procedures for HQ and regions
 - August—RLO Directors meet and ask HQ staff to convey their concerns to the M&B Committee about new policies and procedures (Dallas, TX)
 - September—PTTC hosts tour of Los Alamos National Lab for IPAA Governors
 - November—Board adopts “Producer Advisory Group Guidelines”
 - November—First national conference- ETEC ’97 with IPAA and Cambridge Energy Research Associates (Houston, TX)
 - December—PTTC national website named by ASAE as one of the nation’s Top 10 Information Clearinghouse websites
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1998

- January—HQ establishes RLO-NET to improve communication with RLOs via Internet
 - February—First marketing brainstorming session with Board/RLO/HQ representatives (Golden, CO)
 - May—DOE awards new grant to PTTC extending to April 2003 (replaces BDM contract)
 - July—Board adopts new Business Plan with marketing focus
 - August—RLO Directors and HQ staff visit Sandia National Labs
 - September—HQ releases new logo and updated image for stationery, publications, etc.
 - October—PTTC’s first webcast of a workshop (West Coast)
 - November—PTTC holds second national conference ETEC ’98 with IPAA (New Orleans)
 - November—HQ releases “E&P Software Sampler” on CD-ROM
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- December—Board launches Industry Crisis Action Plan, ratifies new mission statement and adopts “Guidelines for Professional and Ethical Conduct”
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1999

- January—PTTC signs agreement with *World Oil* to publish case study digest
 - February—PTTC begins extending RLO subcontracts to April 2003
 - March—Board adopts “Conflict of Interest Policy” and elects officers (Leo Schrider elected as Chair and Clark Southmayd as Vice Chair)
 - June—PTTC Chair Leo Schrider speaks at first DOE Oil & Gas Conference (Dallas, TX)
 - July—Board meets in Washington, DC. Votes to add one RLO representative to Board
 - August—HQ releases “Solutions from the Field” report and starts adding workshop summaries to website.
 - September—Inaugural issue of “Petroleum Technology Digest” released as supplement of *World Oil*
 - November—Deborah Rowell, PTTC’s founding Executive Director, announces her intent to resign in June.
 - December—Executive Search Committee, chaired by Bob Nance, begins search for new Executive Director.
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2000

- January—PTTC signs agreement with Hart Publications to provide a state-of-the-art technology summary in each issue of *PTTC Network News*.
 - February—PTTC Chair Leo Schrider and HQ staff meet with DOE in Washington to discuss funding.
 - March—PTTC Board and RLO Directors meet jointly in Kansas City
 - April—West Coast region holds first PTTC event in Alaska.
 - May—Second issue of semi-annual publication, “Petroleum Technology Digest” released with *World Oil*
 - June—Don Duttlinger selected as next PTTC Executive Director (effective July 1, 2000)
 - November—Board approves strategic relocation of PTTC HQ to Houston after 7 years in Washington
 - December – Move of HQ Office to Houston completed within weeks
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2001

- January—PTTC begins monthly column “Tech Connections” with *The American Oil & Gas Reporter*
 - February—Begin implementing website enhancements focused on consistency and user friendliness.
 - March—Clark Southmayd of Oneok Resources Company is elected new Chairman and Jim Bruning named Vice Chair of PTTC National Board during meeting in Washington
 - Summer/Fall—PTTC co-sponsors Maurer Technology’s “Optimized Horizontal Drilling” workshop series
 - October—DOE and PTTC begin an eight-workshop Traveling Workshop series with DOE.
 - December – Move of HQ Office to Houston completed within weeks.
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2002

- January—DOE white paper documenting impact and outlining long-term vision completed.
- February—lessons learned from DOE/PTTC Traveling Workshop documented.
- March—Time frame of joint Board/RLO meeting changed to increase impact of Hill visits
- April—PTTC initiates Technology Alert service via broadcast E-mail
- July—HQ expands mailing list and increases exhibit schedule
- September—activity levels set new records

2003

- January—PTTC signs contract with the California Energy Commission to assist operators in reducing energy costs as supplement to DOE PUMP award
- March—Board elects new leadership: James Bruning, Bruning Resources, LLC, Arkansas as Chairman; Brook Phifer, Nico Resources, LLC, Colorado, Vice Chairman
- March—Board Members/RLO Directors conduct Hill visits during critical decision-making period
- April—PTTC receives contract extension through September 2003
- July—Board completes strategic planning survey and defines further planning needs
- September—PTTC completes current contract, exceeding prior records for activity by significant levels

**SUMMARY OF PTTC REGIONAL ACTIVITY
(4th QUARTER—FY03)**

Region	Workshops			Industry Contacts	Website (mo. avg.)		Newsletter Function
	No.	Attend.	From E&P Industry (%)		User Session	Page Views	
Appalachian	6	459	422 (92%)	1,226	5,096	10,327	Online newsletter—Aug 2003
Central Gulf	1	19	14 (74%)	171	4,375	9,485	LIOGA newsletters—July 2003, circ. 923
Eastern Gulf	2	35	28 (80%)	242	3,590	4,854	Qtrly newsletter—early Oct 2003, circ. 600 95% ind.
Midwest	1	37	23 (63%)	1,442	5,184	9,828	Semi-annual newsletter—May 2003, circ 2800
N. Midcontinent	5	329	291 (88%)	828	19,930	66,714	Semi-annual newsletter—Jan 2003, circ. 4938
Rocky Mountain	5	422	335 (79%)	610	3,754	10,862	Qtrly newsletter – (8/03) circ. 2104 (7% electronic)
S. Midcontinent (Includes PUMP)	9	319	294 (92%)	321	458		Qtrly newsletter – July 2003, broad mailings
Southwest	1	22	19 (86%)	158	17,584	65,632	Column in semi-annual PRRC newsletter; not this quarter, plus online
Texas	4	80	79 (96%)	1,029 (927 TIPRO)	7,248 (181,886 Outreach)	31,258 (289,153 Outreach)	Qtrly newsletter-July 2003, circ. 2000; assoc. newsletters, SPE Permian Basin, Midland paper
West Coast (Includes PUMP)	4	126	71 (56%)	99	1,961	6,067	Announcements in CIPA's weekly email
All Regions 4th Qtr	38	1,848	1,576 (85%)	6,126	69,180	215,027	
FY03 (3 qtrs)	131	6,768	5,759 (85%)	18,588			
All Regions FY02 Total	147	6,243	5,177 (83%)	18,377	FY03 versus FY02		
FY03 Total	169	8,616	7,335 (85%)	24,714	-- 15 % increase in # of workshops -- 38 % increase in attendance -- 34 % increase in contacts		

Repeat Attendance at Workshops: Of 145 workshops during FY03 where repeat attendance was reported, the calculated average was 50%. (Measured as % of industry attendees that had previously attended a workshop in that region).

PTTC Appalachian Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (9 events)			403	330(82%)	
Fractured Reservoirs	Washington, PA	12/03/02	142	109 (77%)	74%
Seismic Imaging of Structural, Stratigraphic and Diagenetic Plays	Morgantown, WV	3/06/03	47	36 (75%)	94%
Well Tender (Safety)	Prestonburg, KY	4/22/03	100	97 (97%)	1%
Applied Reservoir Characterization for the Independent Operator, Emphasis on Compartmentalized Reservoirs and Routine Techniques for Detecting Compartments	Washington, PA	4/22-23/03	38	25 (66%)	84%
Well Tender (Safety)	Buckhannon, WV	4/24/03	109	109 (100%)	6%
Paraffin, Asphaltene and Scale	Washington, PA	6/3/03	28	7 (25%)	71%
Produced Water & Associated Issues (PUMP)	Washington, PA	6/18/03	25	19 (76%)	47%
Trenton-Black River Core Workshop	Clymer, NY	7/10/03	24	20 (83%)	75%
Geophysical Log Correlation, Subsurface Ordovician Rocks Beneath the Plateau in TN and KY	Knoxville, TN	8/7/03	37	24 (65%)	30%
Well Tender	Bremen, OH	8/26/03	118	112 (95%)	12%
Well Tender	Indiana, PA	8/28/03	258	249 (97%)	6%
Well Tender	Indiana, PA	8/29/03			
Subsurface Fluid Pressures and Their Relation to Oil and Gas Generation, Migration and Accumulation (AAPG/SPE Eastern Regional Meeting short course)	Pittsburgh, PA	9/10/03	22	17 (77%)	61%
Total FY03 Attendance (13 events)			948	824 (87%)	
Improving the Bottom Line w Data Management	Morgantown, WV	10/2/03	Workshops Scheduled During 1st Qtr FY04		
Carbonate Well Log Interpretation and Reservoir Characterization of Carbonates in the Appalachian Basin (Ohio Geological Society, Ohio O&G Assoc.)	Columbus, OH	10/6/03			
Converting Anomalously Pressured Gas Resources To Energy Reserves	Washington, PA	10/9/03			
Coalbed Natural Gas (WV Development Office)	Roanoke, WV	10/29/03			

Application: Repeat attendance (% of attendees previously attending a regional workshop) =45%.
 37 % of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond "Yes." (Based on data from 34 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	1	142	109 (77%)	961	4,356	10,639	Only online newsletter, 2-3 times per year
2 nd Qtr	1	47	36 (77%)	926	4,596	11,484	
3 rd Qtr	5	300	257 (86%)	1,123	4,668	9,727	
4 th Qtr	6	459	422 (92%)	1,226	5,096	10,327	
FY03 Total	13	948	824 (87%)	4,236	4,679	10,544	
FY03 Avg. Attendance = 73 vs. 45 in FY02 (13 Actual vs. 9 Originally Planned)							
FY04: 10+ Workshops Planned (4 scheduled during 1st Qtr)							

Regional Website: Website traffic grew steadily through the year, although the average monthly page views fluctuated somewhat, with the highest use during the winter months of January to March. Session lengths

average 12 to 13 minutes viewing pages in the original site, but users spend another 4 to 5 minutes viewing pages in the new interactive GIS feature that was added during the initial calendar quarter. The new GIS feature includes layers of Trenton-Black River, horizontal wells and coal bed methane wells. Popular sections in the original site include: AAPG Eastern Section, newsletters, Trenton-Black River play, research performed by independents, and the summary of fracture stimulation techniques. Near the end of the fiscal year, another new feature was added, an interactive PUMP site, which should increase or shift usage during FY04.

Workshops/Events: Workshop attendance was up 135% in FY03 relative to FY02, but the number of workshops held increased from 9 to 13, accounting for some of the increase. However, the average attendance per workshop was 73, versus 48 in FY02. There were two main reasons for this increase in average attendance: first, a very successful workshop on fractured reservoirs led off the year and attracted 142 registrants; and second, a series of well safety for well tender workshops was offered for the first time. Five well tender workshops held in Ohio, Pennsylvania and West Virginia attracted 585 registrants, most of whom were first-time attendees at a PTTC workshop. The region attempted to offer a variety of workshops during the year, with topics such as fractured reservoirs, reservoir characterization, seismic imaging, subsurface fluid pressures, production problems related to paraffin, asphaltene, scale and water, and geophysical log correlation of the Ordovician carbonate portion of the stratigraphic section. The Trenton Stakeholders meeting held late in FY02 resulted in 19 companies agreeing to join the proposed Trenton-Black River Research Consortium, and late in FY03 DOE agreed to provide \$1,012,000 of co-funding for this two-year project.

Resource Center: Mark Hoffman returned to PTTC after a one-year absence, and has established an office in the original resource center full time. Major data efforts were interactive databases for horizontal well, coal bed methane, and Trenton-Black River activity that are accessible in a GIS environment through the website

Outreach/Contacts/Newsletter: Reported contacts increased during the year, reflecting 1) significant proactive outreach to stimulate attendance, 2) continued high interest in Trenton-Black River activity, and 3) efforts associated with the AAPG-SPE 2003 Eastern meeting. Regional outreach relies heavily upon interacting with industry at producer association and professional society meetings across the multi-state region. Participation varies from attending to network to giving a PTTC promotional talk to staffing a PTTC booth. Director Doug Patchen often works with these groups to find speakers for events they are organizing. His national involvement in AAPG also bears fruit for PTTC networking. Staff develops an extensive online newsletter, three again this year, that are among the most frequently accessed sections of the website.

Problem Identification: The region relies on attendee feedback, PAG input and outreach to develop topics for regional workshops. The only formal problem identification event held in the region this year was the Trenton-Black River Research consortium meeting where company representatives addressed technology needs.

Follow-up: Staff continues to develop data showing Trenton-Black River permitting activity, highlighting the increase in activity that followed PTTC workshops. A talk that correlates the growth in public knowledge of the play with PTTC's role in transferring this knowledge through five workshops, the stakeholders meeting and the new interactive website feature was prepared for the AAPG-SPE Pacific Section meeting in Long Beach. This talk was updated to be presented again at the AAPG Mid Continent meeting in Tulsa in October 2003.

Case Studies: Experts who presented workshops during the year used numerous case studies to illustrate important points. Although not all of these examples were from within the Appalachian basin, all or most should have direct application. Chief among these are the workshops on fractured reservoirs, reservoir characterization, production problems with paraffin, asphaltene, scale and water, and the final workshop on subsurface fluid pressures and their relation to fluid migration and accumulation. This workshop included specific case studies of the Clinton play in Ohio and the Trenton play.

PTTC Central Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (5 events , plus two reported by E. Gulf/TX)			172	142 (83%)	
Louisiana DNR's SONRIS Database	Lafayette, LA	10/10/02	73	67 (92%)	8%
Louisiana DNR's SONRIS Database	Shreveport, LA	10/17/02	62	51 (82%)	24%
Louisiana DNR's SONRIS Database	Houston, TX	11/14/02	83	76 (92%)	0%
Asphaltene, Paraffin & Scale Problems	Lafayette, LA	1/16/03	29	27 (93%)	33%
Hydraulic Fracturing Technology (Texas)	Shreveport, LA	4/23/03	21	19 (90%)	76%
South Louisiana Petroleum Exploration Symposium (New Orleans Geological Society)	New Orleans, LA	5/22/03	333	304 (91%)	21%
Managing Upstream Oil & Gas Producing Assets	Baton Rouge, LA	9/17/03	19	14 (74%)	31%
Total FY03 Attendance (7 events)			620	558 (90%)	
Reservoir Fluids 2003, PVT and Beyond	Lafayette, LA	11/12/03	Workshops Scheduled During 1st Qtr FY04		

Application: Repeat attendance (% of attendees previously attending a regional workshop) =28%.
24% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond "Yes." (Based on data from 19 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	3	218	194 (89%)	355	3,700	7,747	No newsletter – only LIOGA announcements
2 nd Qtr	1	29	27 (93%)	191	4,382	8,884	
3 rd Qtr	2	354	323 (91%)	166	4,521	9,028	
4 th Qtr	1	19	14 (74%)	171	4,375	9,485	
FY03 Total	7	620	558 (90%)	883	4,245	8,786	
FY03 Avg. Attendance = 89 vs. 34 in FY02 (7 Actual vs. 7 Originally Planned)							
FY04: 6 Workshops Planned (1 scheduled during 1st Qtr)							

Regional Website: In terms of user sessions, usage began higher than previous years, increased gradually during the year, and dropped slightly during the 4th Qtr. Page views continue to be affected positively by the updating and redesign of the website. Routine maintenance and updating continues to be the major activity involved with the website.

Workshops/Events: Not only were the SONRIS workshops a success (including the joint one with the Texas Region in Houston), but the region also co-sponsored a well-attended exploration symposium with the New Orleans Geological Society. Together with three other workshops in Shreveport, Lafayette and Baton Rouge, workshop attendance during FY03 increased more than three-fold versus FY02. The region worked cooperatively with the Texas regions on two of its workshops and will continue to do so in the future.

Resource Center: Data are now available through SONRIS, and most effort is now directed towards advising Louisiana Department of Natural Resources (DNR) on potential improvements and on helping industry learn how to use the system. Still, the Louisiana Desktop Well Reference (LDWR) was updated with data up to 2002 and can still provide operators with a back-up system for basic well/production data. Since the LDWR only contains data from 1977 to the present, plans are underway to include all available data prior to 1977. Information requests that are received continue to be efficiently answered by staff.

Outreach/Contacts/Newsletter: There was a rather high contact rate during the first two months of FY03 related to the SONRIS workshops, but overall FY03 contact activity decreased slightly compared to FY02 levels. Regarding newsletter input, the region continues to make regular contributions to the LIOGA newsletter, whose distribution remains at about 1,000 people. Coordinator Don Goddard made a few visits to producers across the state, particularly to Lafayette and to Shreveport. Director Bob Baumann and Goddard continue to engage in speaking opportunities at regional meetings. Goddard was also very involved in preparations for the GCAGS annual meeting to be held in Baton Rouge in October 2003. He also continued his tradition of assisting HQ in staffing PTTC's booth at NAPE/APPEX prospect-oriented events.

Problem Identification: Industry needs and direction for future activities were determined by feedback from workshop participants and PAG input. Specific PAG direction led to the highly successful SONRIS workshops, plus the Asset Management workshop. Interaction with independent producers is maintained by following the suggestions on workshop feedback forms, contacts through the resource center and contacts through networking with LIOGA. Staff receives other input when supporting PTTC's booth at NAPE/APPEX and participating in regional professional meetings.

Follow-up: On several occasions speakers involved in our workshops were contacted and successful application of a particular technology had resulted from their participation in PTTC events. For example, the paraffin, asphaltene and scale workshop led to a number of important technology applications. Production technologies, such as the permaswab, perfdriII, and metal alloy downhole tools for reducing asphaltene buildup, were given wide attention and used successfully in the domestic and international arenas.

Case Studies: Several priorities on TMR Exploration's portfolio have stalled its development of the bypassed oil potential in their Livingston Field (Wilcox). However, with regard to the shallow gas potential in the Florida Parishes of Southeastern Louisiana, PTTC's efforts in bringing together two operators interested in producing shallow gas may result in a possible successful case study.

PTTC Eastern Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (7 events, plus one by Central Gulf)			441	333 (76 %)	
Exploration & Production Issues (US O&G Assoc.)	Jackson, MS	10/30/02	103	99 (96%)	15%
Seismic Stratigraphic Interpretation	Jackson, MS	11/20/02	30	25 (83%)	80%
Kingdom Suite 2D/3D (Basics)	Raymond, MS	1/27/03	9	3 (33%)	67%
Kingdom Suite 2D/3D (Advanced)	Raymond, MS	1/28/03	9	3 (33%)	67%
Fractured Reservoirs	Jackson, MS	3/12/03	47	34 (72%)	65%
International Coalbed Methane Symposium (several additional sponsors)	Tuscaloosa, AL	5/5-9/03	256	230 (90%)	4%
Geohydrology (Mississippi State Board of Prof. Geologists)	Jackson, MS	5/29/03	40	35 (88%)	25%
Paraffin and Asphaltene Formation Damage Control	Jackson, MS	8/14/03	18	15 (83%)	53%
GeoPlus PETRA Basic Training	Raymond, MS	9/17-18/03	17	13 (76%)	46%
Total FY03 Attendance (9 events)			529	457 (86%)	
AVO Technology	Jackson, MS	10/9/03	Workshops Scheduled During 1st Qtr FY04		
2003 Oil & Gas Forum, E&P Technical Issues (USOGA)	Point Clear, AL	10/13-15			
Alabama Oil & Gas (State Oil and Gas Board of AL)	Tuscaloosa, AL	12/5/03			

Application: Repeat attendance (% of attendees previously attending a regional workshop) =47%.
32% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond "Yes." (Based on data from 23 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	2	133	124 (93%)	207	2,879	6,119	Newsletter = 600 Quarterly
2 nd Qtr	3	65	40 (62%)	227	3,177	6,078	
3 rd Qtr	2	296	265 (90%)	214	3,062	4,698	
4 th Qtr	2	35	28 (80%)	242	3,590	4,854	
FY03 Total	9	529	457 (86%)	890	3,177	5,437	
FY03 Avg. Attendance = 59 vs. 63 in FY02 (9 Actual vs. 8 Originally Planned)							
FY04: 8 Workshops Planned (2 scheduled during 1st Qtr)							

Regional Website: Usage is staying stable in the 2,900 to 3,600 user sessions per month range. Beyond normal updating, regional technical studies and case studies are frequently placed online. The region also supports a data-oriented site at the Mississippi Office of Geology.

Workshops/Events: Overall attendance increased 20% during FY03. Staff has coordinated with the Mississippi State Board of Registered Professional Geologists to deliver workshops that help registered geologists meet CEU requirements. Primary technical topics included seismic stratigraphic interpretation, fractured reservoirs and, for operations-oriented individuals, paraffin, asphaltene and scale. Although not a major focus of the program, the region does provide some software training each year. During FY03 software training focused on Seismic MicroTechnology 2D/3D Basics and Advanced seismic software and GeoPlus PETRA Basics geologic software.

Resource Center: PTTC support funding has been instrumental to development of the geological-oriented website at the Mississippi Office of Geology. In FY03 the region supported the industry-led effort to automate the processing of Mississippi state regulatory forms and to make available Mississippi oil and gas production data by InFocus Technologies.

Outreach/Contacts/Newsletter: Contact activity, which is in the two to three contacts per day range, increased during FY03. Director Ernie Mancini is extremely well networked within the region's strong geological community and within AAPG across the world. The two-page regional newsletter with circulation of 600 is issued like clockwork on a quarterly basis. Beyond announcements, it attempts to summarize technology insights presented during recent workshops or in reports relevant to the region.

Problem Identification: Industry needs and directions for future activities are determined through PAG input, interaction with workshop attendees, resource center contacts and networking. Standard practice at the end of each workshop is to spend a few minutes interacting with producers about things they want to learn more about.

Follow-up: Efforts, beginning with a 1997 workshop on 'Computers and Geology' and continuing with the geological-oriented website developed by the Mississippi Office of Geology with PTTC support funding, have changed the way independents do business. Requests now frequently come via E-mail rather than phone, and increasing numbers register for workshops online. In the technology realm, play-based workshops are known to have influenced industry. Speakers from a 'Smackover Reef' workshop have met with operators in Texas and Mississippi to review specific projects. Data from the 'Norphlet' workshop has been used for onshore exploration. Exploration objectives have been targeted in Lower Cretaceous carbonates (James Limestone) based on information presented at the November workshop on the Lower Cretaceous. Tuscaloosa Marine Shale objectives were planned in Mississippi from that workshop. The shale workshop, which was initiated by an independent, has been one of the region's best attended. Wells have been drilled and production developed because of, at least partially, these workshops.

Case Studies: The DOE-funded research on Womack Hill, Vocation and Appleton fields have been presented at regional and national meetings during FY03. Reports on these field case studies are posted on the regional website.

PTTC Midwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Total FY02 Attendance (8 events)			284	212 (75%)	
Examining Well Cuttings	Mt. Vernon, IL	11/20/02	30	18 (60%)	72%
Reservoir Analysis from Drill Cuttings/Cores	Kalamazoo, MI	11/22/02	32	14 (44%)	84%
GeoGraphix (Discovery) Training	Mt. Carmel, IL	2/6-7/03	20	18 (90%)	81%
PUMP II—Payzone Results and ArcIMS Introduction (Illinois O&G Assoc.)	Mt. Vernon, IL	2/27/03	50	36 (72%)	83%
Mini-Seismic workshop (Illinois O&G Assoc.)	Evansville, IN	3/5/03	50	44 (88%)	59%
Characterization & Modeling of Mt. Simon Gas Storage Reservoirs, Herscher & Manlove Fields (SPE Gas Storage)	Pontiac, IL	3/19/03	40	40 (100%)	
Horizontal Drilling, Real Michigan Field Experiences (SPE Northern Michigan)	Mt. Pleasant, MI	3/20/03	197	144 (83%)	68%
Handling Produced Water	Mt. Pleasant, MI	7/11/03	37	23 (63%)	87%
Total FY03 Attendance (8 events)			456	337 (74%)	
Trenton/Black River, Core Workshop & Case Study Possibilities Within Michigan Basin & Similarities Outside the Basin	Mt. Pleasant, MI	10/23/03	Workshops Scheduled During 1st Qtr FY04		

Application: Repeat attendance (% of attendees previously attending a regional workshop) =76%.
45% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond “Yes.” (Based on data from 22 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1st Qtr	2	62	32 (52%)	1,503	3,981	11,166	Newsletter = 3000
2nd Qtr	5	357	282 (79%)	1,277	3,490	9,100	
3rd Qtr	0	0	0 (--%)	1,329	4,525	7,883	
4th Qtr	1	37	23 (63%)	1,442	5,184	9,828	
FY03 Total	8	456	337 (74%)	5,551	4,295	9,494	
FY03 Avg. Attendance = 57 vs. 32 in FY02 (8 Actual vs. 8 Originally Planned)							
FY04: 6+ Workshops Planned (1 scheduled during 1st Qtr)							

Regional Website: Website usage reflects only the primary Illinois Basin website since similar tracking software cannot be used on the Michigan satellite’s server. Illinois usage was about the same as prior years with peak usage in the fall through winter quarters. Spurred by the increasing amount of data put online, Michigan usage continued to increase. Tracking of the new Interactive Map Server is about to begin and is expected to significantly increase Illinois usage once the tracking program is placed online.

Workshops/Events: Repeat attendance is very high, indicating that those who have attended workshops continue to find it of value in their work. Overall attendance increased 46% during FY03, largely due to the very successful Horizontal Drilling workshop in Michigan. The Midwest continues to present computer workshops at Wabash Valley College in Mt. Carmel, Illinois; attendance is limited to the number of seats in the computer lab. The RLO has taken good advantage of the nationally developed Produced Water workshop with one completed presentation in Michigan in July and another scheduled next March in Illinois. Joint meetings with professional or industry association annual meetings have become a very successful opportunity for scheduling workshops. A planned July workshop on produced water was rescheduled for FY04 because the operators were too busy with

field work and did not have time to consider attending a workshop. Thus, workshops are concentrated in the winter and early spring when access to the field is restricted by weather and road weight limitations. Play-based workshops are very popular and will be scheduled as state geological survey research studies are completed.

Resource Center: Illinois Basin staff continues to develop the ArcIMS interactive map server available on the web. This effort is primarily supported by a DOE PUMP II grant. This allows operators to examine basic well data and maps for Illinois. Water flood data are being incorporated into the displays and download capability is being developed. Custom map requests continue to be popular. While not individually qualifying as products, the numerous and expanding databases that the Michigan satellite places online are very popular center activities. The Michigan Core lab continues to acquire new holdings and with University approval and assistance is raising funds for a new storage building. Leveraging all funding sources, Western Michigan University provides highly valued core/resource center facilities for the state's operators.

Outreach/Contacts/Newsletter: Contact activity has increased again by more than 50% this year, reflecting very active programs both in the Illinois Basin and in Michigan. RLO staff is very active in professional societies, attends four producer association meetings, often staffing a booth while there. The Michigan satellite is very active with the Michigan Oil and Gas Association. Illinois Basin staff visits targeted operators throughout the year. Newsletter, Tech Alert and email campaigns about DOE's Independents program are known to have stimulated several operators to successfully submit research proposals. Director Dave Morse has obtained a new Coalbed Methane Research Grant (with the Kentucky and Indiana Geological Surveys). Circulation of the semi-annual newsletter is about 2,700. Demand for map products continues to grow, particularly as operators are learning to build and use digital data. This may be partly an outgrowth of software training workshops.

Problem Identification: Feedback from workshop participants and booth traffic support continuing software training and expanding data compilation and online dissemination efforts. Michigan operators have suggested many topics, including: underbalanced drilling, new pumping/production methods, new seismic techniques for reservoir characterization, coiled tubing drilling, and production problems and solutions in coalbed methane and Antrim Shale.

Follow-up: Both the Michigan Satellite and the RLO are checking with workshop attendees to see how they have applied new technologies. From these, case studies such as the Mill Shoals story (Aux Vases field development) are being developed.

Case Studies: RLO staff recently presented the Mill Shoals success story and a talk on the new interactive map server at AAPG's Midcontinent section meeting in Tulsa (October 2003). Staff learned that John Basnett, an independent geologist in Illinois, developed a new exploration concept at Mill Shoals based on thoughts learned from a regional Aux Vases workshop he attended. Headington Oil subsequently partnered with Basnett, drilled the discovery well and as of mid 2003, had drilled 55 new development wells. Summary information has been placed on the national website (www.pttc.org/impact/impact_more.htm), and staff is working towards getting the case study published in the *Petroleum Technology Digest*.

PTTC North Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (9 events)			617	485 (79 %)	
Crash Course in Log Analysis: An Excel Spreadsheet (Kansas Geological Survey)	Lawrence, KS	10/17/02	26	13 (50%)	23%
Practical Log Analysis Guide to O&G Fields in Kansas (Kansas Geological Survey)	Lawrence, KS	10/18/02	13	7 (54%)	69%
Arbuckle Polymer Treatment Forum Session (TORP)	Wichita, KS	2/04/03	57	45 (79%)	53%
Crash Course in Log Analysis: An Excel Spreadsheet (Kansas Geological Survey)	Lawrence, KS	2/06/03	17	14 (82%)	53%
Practical Log Analysis Guide to O&G Fields in Kansas (Kansas Geological Survey)	Lawrence, KS	2/07/03	10	2 (20%)	50%
15 th Oil Recovery Conference (TORP)	Wichita, KS	3/12-13/03	123	80 (65%)	78%
Lunch and Learn Seminar—Learning and Mastering Geoscience Software Systems	Wichita, KS	3/20/03	12	9 (75%)	75%
Reading the Rocks from Wireline Logs (Kansas Geological Survey)	Lawrence, KS	3/21/03	21	9 (43%)	43%
Reducing Water Production Using Gel Polymers	Wichita, KS	7/31/03	78	66 (85%)	53%
Sessions at KIOGA Annual Meeting GEMINI Online System CBM in Eastern Kansas Dynamic Mapping of Kansas O&G Data Update on Lansing/Kansas City CO ₂ Pilot	Wichita, KS	8/18/03	63 avg. 56 111 41 43	90% est.	
Total FY03 Attendance (13 events)			608	470 (77%)	
Crash Course in Log Analysis; An Excel Spreadsheet Workshop (KGS)	Lawrence, KS	10/23/03	Workshops Scheduled During 1st Qtr FY04		
Practical Log Analysis Guide, Oil & Gas Fields of Kansas (KGS)	Lawrence, KS	10/24/03			
Lunch and Learn: Coalbed Methane (SPE Wichita)	Wichita, KS	11/5/03			

Application: Repeat attendance (% of attendees previously attending a regional workshop) =55%.
40% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond “Yes.” (Based on data from 16 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	2	39	20 (51%)	587	19,406	78,031	Semiannual Newsletter = 4938
2 nd Qtr	6	240	159 (66%)	989	18,297	64,475	
3 rd Qtr	0	0	--	605	20,438	66,038	
4 th Qtr	5	329	291 (88%)	828	19,930	66,714	
FY03 Total	13	608	470 (77%)	3,009	19,518	68,815	
FY03 Avg. Attendance = 47 vs. 69 in FY02 (13 Actual vs. 11 Originally Planned)							
FY04 Workshop Plans: 12+ (3 scheduled during 1st Qtr)							

Regional Website: Usage remained relatively consistent at near 20,000 user sessions per month. Expansion of databases and improved access continues as a high priority. Prototype mapping capability was added to the oil and gas field pages. This enables the viewer to extract well locations and legal field outline from the databases and places them in a map viewer. A link has been added between the lease production and the API number of

the wells on the lease. The web pages for wells and production were interconnected for records tied together by the KGS. The prototype on-the-fly mapping capability to the oil and gas fields was enhanced.

Workshops/Events: Overall attendance was about the same as during FY02. Workshops covered a variety of topics of interest to the operators, although there was a definite emphasis on polymer treatments to reduce water production. The February 2003 workshop was “by invitation only” to producers and vendors actually involved in performing gel polymer treatments in Kansas. This format promoted candid interaction between customers and technology providers and stimulated data sharing with PTTC. Later in the year information was shared in a public workshop. Major cooperative events included supporting TORP’s 15th Annual Recovery Conference and providing seminars during KIOGA’s annual meeting. Director Reynolds supported Independents’ Day in the West Coast Region and will be giving a similar presentation at AAPG’s Midcontinent Section meeting in Tulsa during October 2003.

Resource Center: Director Rodney Reynolds worked with HQ and the South Midcontinent Region to develop a manual to assist operators in dealing with issues related to produced water. Work was conducted as part of PTTC’s PUMP project. Information contained in the manual was presented at 12 different workshops in Oklahoma, Arkansas, Ohio, Michigan and Texas.

Outreach/Contacts/Newsletter: Contacts remain at high levels, averaging more than 10 per working day. Staff resources to respond can often be strained. Staff attends and is frequently involved in activities of Kansas’s major producer organizations, KIOGA and EKOGA. As time and resources permit, staff attends technical events outside the region (SPE annual meeting, coalbed methane conference in Denver for example) to learn about new technologies and make new contacts. The regional newsletter, recently reduced from quarterly to semi-annual frequency to reduce cost, is distributed broadly to nearly 5,000 people in multiple states.

Problem Identification: The region relies on feedback from workshop participants and the PAG to determine current areas of high regional interest.

Follow-up: Although follow-up with individual workshop participants is limited, staff generally hears about applications of new technologies in Kansas and follows-up with involved producers and vendors/service companies, often identifying case studies (see below). This informal ear-to-the ground process works well.

Case Studies: Funding for the North Midcontinent for FY03 included supplemental funding to develop case studies. Plans were developed and work is complete to document three case studies focused on successful technology applications in mature Arbuckle reservoirs in Kansas. The technologies being documented are: 1) application of 3-D seismic, 2) gelled polymer treatments on producing wells to reduce water production and 3) solid propellant stimulations. These case studies, along with associated databases, are being placed online. Staff is working with the Tertiary Oil Recovery Project, gel polymer service providers and operators to study gel polymer water shut-off treatments in Kansas Arbuckle producing wells. Recent treatments are proving to be more effective in controlling water production and increasing oil production than past treatments. A database on treatments conducted to date is being developed. Research staff are investigating areas where university engineers and scientists can be of assistance in better defining where and how to apply this technology. Questions looking to be answered include candidate well selection, treatment sizing and modeling what actually occurs during and after the treatments. This work has complemented our case study documentation. A TORP/PTTC website is being developed that will contain the database information. The website (www.nmcpttc.org/gel/index.html) currently contains detailed information on 37 treatments and will soon be expanded to 92 treatments, including economic analysis.

PTTC Rocky Mountain Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (28 events)			1,384	1,240 (90 %)	
Innovative Gas Exploration Concepts (RMAG)	Denver, CO	10/01/02	313	275 (88%)	85%
Structural Traps and Fractured Reservoirs (Montana Geological Society, SPE Billings)	Billings, MT	10/18/02	22	17 (85%)	86%
Simulation Users Group	Golden, CO	10/22/02	4	3 (75%)	75%
GeoPlus PETRA Basic Training	Golden, CO	11/7-8/02	17	16 (94%)	82%
GeoGraphix GESX Advanced Trng (for Flying J)	Salt Lake City	11/14/02	6	6 (100%)	50%
Exploitation of Hydrocarbon Reservoirs Using Intelligent Computing Software	Golden, CO	11/15/02	19	17 (89%)	88%
Simulation Users Group	Denver, CO	11/19/02	12	12 (100%)	92%
GeoGraphix GESX Training (for Questar)	Golden, CO	11/20/02	17	16 (94%)	29%
GeoPlus PETRA Basic Training (for Encana)	Golden, CO	11/21-22/02	12	12 (100%)	67%
GeoGraphix GESX Advanced Training (for Questar)	Golden, CO	12/16-17/02	18	18 (100%)	94%
SMT Kingdom Suite + (Data Loading)	Golden, CO	1/22/03	20	18 (90%)	75%
SMT Kingdom Suite + (Interpretation)	Golden, CO	1/23/03	19	17 (89%)	75%
Simulation Users Group (Red River B simulation using Boast VHS, by Westport Resources)	Golden, CO	1/23/03	9	9 (100%)	100%
SMT Kingdom Suite + (Earthpak)	Golden, CO	1/24/03	17	15 (88%)	75%
Desktop Applications Excel, Access Database Fund.	Denver, CO	2/07/03	11	11 (100%)	80%
Desktop Applications PowerPoint & Graphics	Denver, CO	2/14/03	13	13 (100%)	80%
Simulation Users Group (vertical & horizontal CO2 injection using IFLO, by Westport Resources)	Denver, CO	2/20/03	11	11 (100%)	100%
Desktop Applications Advanced PowerPoint	Denver, CO	2/21/03	9	9 (100%)	80%
Soil Remediation	Casper, WY	2/25/03	64	40 (63%)	
Gas-Well Dewatering (several sponsors)	Denver, CO	3/2-5/03	240	225 (94%)	20%
Life Cycle of a Rocky Mountain Gas Prospect: A Canadian American Perspective (several sponsors)	Denver, CO	3/06/03	105	100 (95%)	50%
Simulation Users Group (3D reservoir simulation, by iReservoir.com)	Golden, CO	3/13/03	10	10 (100%)	90%
Unitization (IPAMS, GTI: pre-conference workshop)	Denver, CO	4/15/03	8	7 (88%)	25%
Rocky Mountain Energy Technology Conference (IPAMS, GTI)	Denver, CO	4/16-17/03	250	225 (90%)	90%
Crash Course in Log Analysis (IPAMS, GTI)	Denver, CO	4/18/03	18	16 (89%)	78%
Desktop Applications Excel, Access Database Fund.	Salt Lake City, Utah (AAPG annual meeting)	5/10/03	10	9 (90%)	30%
Complex Well Technology: Multidiscipline Review of Application Screening, Design, Implementation and Intervention of Horizontal & Complex Wells		5/11/03	9	9 (100%)	10%
Desktop Applications PowerPoint & Eff. Graphics		5/11/03	15	13 (87%)	30%
Subsurface Fluid Pressures & Their Relation to Oil & Gas Generation, Migration, and Accumulation		5/11/03	45	40 (89%)	10%
GeoPlus PETRA Basic Training	Golden, CO	5/20-21/03	18	14 (78%)	67%
Simulation Users Group	Golden, CO	5/21/03	8	8 (100%)	100%
GeoPlus PETRA Cross Section (Encana)	Golden, CO	6/2/03	10	10 (100%)	20%
Paraffin, Asphaltene and Scale	Denver, CO	6/5/03	8	7 (88%)	38%
Coalbed Methane Symposium (RMAG)	Denver, CO	6/10/03	292	262 (90%)	85%
Coal Stratigraphy Field Course (RMAG, WGA)	Rock Springs WY	6/11-14/03	10	9 (90%)	40%
GeoPlus PETRA Basic Training	Golden, CO	6/18-19/03	15	13 (87%)	
Futures in Energy (on campus training)	Golden, CO	6/22-27/03	8 high school interns, 7 teachers		
Crash Course in Log Analysis, An Excel Course	Golden, CO	6/27/03	10	5 (50%)	50%
GeoGraphix Training	Golden, CO	8/29/03	7	7 (100%)	72%
Field Trip to Teapot Dome (WY Geological Assoc.)	Casper, WY	9/10/03	9	2 (22%)	22%
Simulation Users Group Meeting (Single Well Simulator and GAS3D Simulator)	Denver, CO	9/17/03	5	5 (100%)	100%

Petroleum Systems and Reservoirs of Southwestern Wyoming (RMAG)	Denver, CO	9/19/03	383	306 (80%)	85%
GeoPlus PETRA	Golden, CO	9/25-26/03	18	15 (83%)	72%
Total FY03 Attendance (42 events)			2,116	1,852 (88%)	
GeoPlus PETRA Basic Training	Golden, CO	10/15-16	Workshops Scheduled During 1st Qtr FY04		
GeoPlus PETRA Extra Credit Training	Golden, CO	10/17/03			
Utah Coalbed Methane (SPE)	Salt Lake City	10/24-25/03			
Simulation Users Group: Reservoir Simulation Using Exodus	Denver, CO	10/29/03			
GeoGraphix Training, Overview and Refresher	Golden, CO	11/14/03			
Rapid Cross-Section Generation (Riley, Divestco)	Golden, CO	11/19/03			
Simulation Users Group: Vertex 1000	Denver, CO	11/20/03			

Application: Repeat attendance (% of attendees previously attending a regional workshop) =65%
41% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond "Yes." (Based on data from 101 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1st Qtr	10	440	392 (89%)	645	4,211	17,070	Newsletter = 2104 quarterly
2nd Qtr	12	528	478 (91%)	851	3,137	18,746	
3rd Qtr	15	726	647 (89%)	657	3,201	19,210	
4th Qtr	5	422	335 (79%)	610	3,754	10,862	
FY03 Total	42	2,116	1,852 (88%)	2,763	3,576	16,472	
FY03 Avg. Attendance = 50 vs. 49 in FY02 (42 Actual vs. 29 Originally Planned)							
FY04 Workshop Plans: 40 including simulation users group (8 scheduled during 1st Qtr)							

Regional Website: Usage varied from 3,100 to 4,200 sessions per month during FY03. Webmaster Jeff Robison provided maintenance and enhancements to the site. Agreements with RMAG and WGA were made to trade website maintenance for advertising in their newsletters. This is largely done to provide enough summer work so that high quality work on the website can continue with student help.

Workshops/Events: Overall attendance increased by two thirds during FY03. Facility-limited attendance at software training workshops is offset by large audiences at major regional technology events. Twenty software training workshops were delivered. Major regional events that were co-sponsored included: 1) Innovative Gas Technologies (RMAG), 2) Rocky Mountain Energy Technology Conference (IPAMS), 3) the annual Coalbed Methane Symposium (RMAG), and 4) Life Cycle of a Rocky Mountain Gas Prospect (Petroleum Society CIM Denver Section and others.) The region supported AAPG's Annual meeting by co-sponsoring four short courses. It also developed several topic-oriented workshops. With less funding this year, all but the AAPG short courses were held in the Denver area. The Simulation Users Group has established a good following for its monthly meetings, and plans to continue to add to the online catalog of information and input base cases that are posted on the webpage.

Resource Center: Through combining the resources of AAPG, the Colorado School of Mines, private donors and PTTC, the region is able to maintain an active software training center. Pete Varney, instructor for the desktop applications workshop, and Jewel Wellborn, instructor for the PETRA courses, have conducted some workshops for other regions. The Data Exchange began last year has not taken off, despite a variety of approaches. Low usage combined with a change in software used by the industry partner have placed this effort in jeopardy. Discussions are still in progress with geological surveys regarding listing core holdings.

Outreach/Contacts/Newsletter: Contact activity increased about 20% this year compared to FY02, representing more than 10 contacts per working day. Staff exhibits at selected events (RMAG Prospect Fair and Technofest, Colorado AIPG legislative reception). Director Sandra Mark's presentation about computer technology and the petroleum professional also creates speaking opportunities before professional societies and producer associations. The "Futures in Energy" student internship program drew eight high school students and seven teachers in its first year. The Denver Earth Science Curriculum was used during the one-week on-campus portion of the program. Five students participated in one-month internships with local energy companies. Teachers received a kit worth \$400 to enable them to teach an oil and gas module at their schools.

Problem Identification: Industry needs and directions for future activities are determined through attendee feedback, PAG input and resource center contacts.

Follow-up: Participants have described the value (www.pttc.org/impact/impact_software.htm) of GeoPlus PETRA training in a variety of ways including: saves many hours getting up to speed, at least 40 hrs at \$50 per hour; productivity improved an order of magnitude; productivity improved 4-fold at least. Attendees have reported that local availability of PTTC training saved \$1,000 - \$2,000 in the case of informal (on-the-job) training and \$2,000 - \$3,000 in direct costs for formal training, plus the cost of additional time away from the office required for an out-of-town course. One participant estimated the value of PETRA software and PTTC's training at up to 5% of a project's budget.

PTTC South Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Ind	
Total FY02 Attendance (55 + MWC Trade Fair)			1,758	1,472 (84%)	
Oil & Gas Measurement Problems (MWC)	Duncan, OK	10/3/02	15	15 (100%)	86%
Oil & Gas Measurement Problems (MWC)	Oklahoma City, OK	10/10/02	37	37 (100%)	81%
4 th Annual Coalbed Methane Workshop	Norman, OK	10/10/02	84	72 (86%)	71%
Oil & Gas Measurement Problems (MWC)	Tulsa, OK	10/15/02	15	15 (100%)	56%
Oil & Gas Measurement Problems (MWC)	Woodward, OK	10/29/02	37	37 (100%)	47%
Hunton Field Trip	Ada, OK	11/6/02	28	23 (82%)	79%
Spill, Prevention Control Countermeasure (MWC)	Ardmore, OK	11/13/02	63	63 (100%)	65%
Spill, Prevention Control Countermeasure (MWC)	Woodward, OK	11/18/02	24	24 (100%)	66%
Spill, Prevention Control Countermeasure (MWC)	Tulsa, OK	11/19/02	56	53 (94%)	60%
Spill, Prevention Control Countermeasure (MWC)	Oklahoma City, OK	11/20/02	90	88 (98%)	62%
Gas Compressor Applications & Install (MWC)	McAlester, OK	1/09/03	8	8 (100%)	0%
Gas Compressor Applications & Install (MWC)	Oklahoma City, OK	1/16/03	26	26 (100%)	27%
Produced Water & Associated Issues (OGS, MWC—PUMP Contract)	Enid, OK	1/21/03	16	11 (69%)	
Produced Water & Associated Issues (OGS, MWC—PUMP Contract)	Pawhuska, OK	1/22/03	27	22 (81%)	
Gas Compressor Applications & Install (MWC)	Woodward, OK	1/30/03	11	11 (100%)	45%
Measurement Prob. w Elect. Gas Metering (MWC)	Ardmore, OK	2/06/03	20	16 (80%)	40%
Measurement Prob. w Elect. Gas Metering (MWC)	Oklahoma City, OK	2/13/03	63	63 (100%)	78%
Produced Water & Associated Issues (OGS, MWC—Pump Contract)	Ardmore, OK	2/18/03	11	9 (82%)	56%
Produced Water & Associated Issues (OGS, MWC—PUMP Contract)	Okmulgee, OK	2/19/03	9	7 (78%)	11%
Produced Water & Associated Issues (SPE, OGS)	Oklahoma City, OK	2/20/03	15	11 (73%)	0%
Measurement Prob. w Elect. Gas Metering (MWC)	Tulsa, OK	2/20/03	27	21 (78%)	60%
Produced Water & Associated Issues (OGS—PUMP Contract)	Smackover, AR	3/05/03	30	24 (80%)	50%
Production Equipment Operations (MWC)	Oklahoma City, OK	3/13/03	23	21 (91%)	31%
Produced Water & Associated Issues (SPE, OGS—PUMP Contract)	Tulsa, OK	3/20/03	16	12 (75%)	0%
Lunch & Learn: Gas Well Unloading, Capillary Strings, Soaping & Others (AOGC)	Ft. Smith, AR	3/20/03	19	19 (100%)	0%
Production Equipment Operations (MWC)	Enid, OK	3/27/03	5	5 (100%)	0%
Joint Operating Agreements (MWC)	Enid, OK	4/3/03	12	8 (67%)	24%
Joint Operating Agreements (MWC)	Oklahoma City, OK	4/10/03	49	49 (100%)	29%
Joint Operating Agreements (MWC)	Tulsa, OK	4/17/03	15	15 (100%)	34%
Produced Water & Associated Issues (OGS—PUMP Contract)	Norman, OK	4/22/03	52	31 (60%)	75%
Trade Fair (MWC)	Oklahoma City, OK	5/8/03	See discussion under outreach		
Interpreting Reservoir Architecture Using Scale-Frequency Phenomena (OGS)	Oklahoma City, OK	6/19-20/03	78	37 (47%)	38%
Paraffins & Asphaltenes (OGS)	Smackover, AR	7/16/03	29	24 (83%)	52%
Trouble-Shooting Rod-Pumped Wells (MWC)	Enid, OK	8/5/03	20	20 (100%)	40%
Trouble-Shooting Rod-Pumped Wells (MWC)	Ada, OK	8/12/03	12	12 (100%)	8%
Trouble-Shooting Rod-Pumped Wells (MWC)	Tulsa, OK	8/19/03	43	42 (98%)	23%
Applied Geology for the Petroleum Engineer (OGS)	Norman, OK	8/20/03	55	38 (69%)	64%
Trouble-Shooting Rod-Pumped Wells (MWC)	Oklahoma City, OK	8/26/03	68	68 (100%)	47%
Coiled Tubing Applications/Slimhole Comp (MWC)	Elk City, OK	9/23/03	14	14 (100%)	21%
Coiled Tubing Applications/Slimhole Comp (MWC)	Tulsa, OK	9/24/03	35	34 (98%)	8%
Coiled Tubing Applications/Slimhole Comp (MWC)	Oklahoma City, OK	9/25/03	43	42 (98%)	53%
Total FY03 Attendance (40 + MWC Trade Fair)			1,300	1,147 (88%)	
Polymer Treatments for Hi-Water Wells (MWC)	Tulsa, OK	10/14/03			
Polymer Treatments for Hi-Water Wells (MWC)	Oklahoma City, OK	10/15/03			

Cromwell Play (OGS)	Norman, OK	10/22/03	Workshops Scheduled During 1st Qtr FY04
Troubleshooting Rod-Pumped Wells (MWC)	Woodward, OK	11/4/03	
Troubleshooting Rod-Pumped Wells (MWC)	Pawhuska, OK	11/6/03	
Cromwell Play Field Trip (OGS)	Ada, OK	11/12-13/03	
Cromwell Play (OGS, OCGS)	Oklahoma City, OK	11/17/03	
Cromwell Play (OGS, TGS)	Tulsa, OK	12/1/03	
Success in Family-Owned O&G Business (MWC)	Ardmore, OK	12/2/03	
Success in Family-Owned O&G Business (MWC)	Tulsa, OK	12/3/03	
Success in Family-Owned O&G Business (MWC)	Pawhuska, OK	12/16/03	
Success in Family-Owned O&G Business (MWC)	Oklahoma City, OK	12/17/03	

Application: Repeat attendance (% of attendees previously attending a regional workshop) =42%.
43% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond “Yes.” (Based on data from 142 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1st Qtr	10	449	427 (95%)	448			Newsletter = 5000+ plus broad mailings
2nd Qtr	16	326	286 (88%)	284			
3rd Qtr	5	206	140 (68%)	308	286		
4th Qtr	9	319	294 (92%)	321	458		
FY03 Total	40	1,300	1,147 (88%)	1,361	372		
FY03 Avg. Attendance = 33 vs. 32 in FY02 (40 Actual vs. 50 Originally Planned)							
FY04 Workshop Plans: estimated 35 (12 scheduled during 1st Qtr)							

Regional Website: Improvements are gradually being made to the regional website, most notably in the calendar/activities function. Statistics are not felt to adequately reflect usage. Production-related data, which draws users to many regional websites, is not reflected in above since it is located in the now privatized NRIS website. Usage of Marginal Well Commission’s (MWC) website is also not reflected.

Workshops/Events: Overall attendance decreased about 25% compared to FY02, which is proportionate to the decrease in activity level from 55 to 40 events. Although a decrease, 40 events still reflects very effective leveraging of regional funds. The region provides partial support for MWC’s operations-oriented workshop program. MWC’s 26 workshops drew 831 attendees, or 64% of total regional attendance. Eight workshops about “Produced Water and Related Issues” were also held as part of the Region’s PUMP project. Major workshops developed by the Oklahoma Geological Survey included a Hunton field trip, an annual coalbed methane workshop, a geophysics-related workshop in Norman, and Applied Geology for Petroleum Engineers. Three events were held in Arkansas, two workshops and a lunch and learn. An agreement has been made with the Arkansas Oil and Gas Commission to deliver an expanded program in the Fort Smith area, plus a couple workshops per year in southern Arkansas in the future.

Resource Center: OGS’s new core facility is now operational. The extensive core holdings and data available to industry through this facility will serve Oklahoma producers for decades to come. The coalbed methane database developed by OGS supports Oklahoma’s active coalbed methane industry, providing data featured in annual coalbed methane workshops. Literature available through OU’s Youngblood Energy Library is another valued state resource.

Outreach/Contacts/Newsletter: Contacts decreased nearly 40%, but still average more than five contacts per working day. Since most contacts are related to workshop activity, some decrease in activity might be expected with the decrease in the number of workshops held. Staff are now coordinating follow-up with attendees at the

PUMP workshops to determine if producers have taken action with the information they received and to answer additional questions they might have. Results will be tabulated late in FY04 as the PUMP contract nears its end. Circulation for the four-page quarterly newsletter and additional mailings is above 5,000.

Problem Identification: Topics for future workshops are based on feedback from workshop participants, contact activity and PAG input. Interactions with producers during PUMP follow-up will provide additional guidance on topics of high interest in the region.

Follow-up: Rodney Reynolds and Bob Kiker, authors of the “Produced Water and Associated Issues” manual, leveraged the Region’s PUMP effort by delivering the workshop in several other regions, and still more are planned. In Michigan operators are known to have started using polyethylene-lined tubing for reducing downhole failures because of their exposure to the technology through those workshops. HQ initiated follow-up calls to attendees at a series of Hunton Play workshops. Responses confirmed that many wells had been drilled at least partially because of the information received. Economic benefits for technology providers, producers and the state of Oklahoma were estimated (see Table 4). The value of these benefits alone provide a good return on investment in the total PTTC program from inception.

Case Studies: Effort will be focused on capturing technology applications resulting from the Region’s PUMP effort.

PTTC Southwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (2 events, plus three reported by Texas)			72	65 (90 %)	
Produced Water in New Mexico	Farmington, NM	12/4-5/02	78	46 (59%)	20%
2002 CEED CO ₂ Conference (Southwest, CEED, SPE, & others)	Midland, TX	12/10-11/02	Reported by Texas Region		
Electronic Resources for NM Production Data	Artesia, NM	2/26/03	23	20 (86%)	15%
Electronic Resources for NM Prdn. Data(Texas)	Midland, TX	2/27/03	43	40 (93%)	10%
Electronic Resources for NM Production Data	Farmington, NM	3/18/03	30	27 (90%)	15%
Electronic Resources for NM Prdn. Data (Texas)	Midland, TX	4/30/03	25	22 (88%)	10%
H ₂ S Safety Seminar (NM OCD, WERC)	Midland, TX	5/19/03	45	42 (93%)	
H ₂ S Safety Seminar (NM OCD, WERC)	Hobbs, NM	5/21/03	40	37 (92%)	
Mesa Verde Workshop/Field Trip	Albuquerque, NM	5/22-23/03	24	20 (83%)	
H ₂ S Safety Seminar (NM OCD, WERC)	Artesia, NM	5/23/03	53	50 (94%)	
H ₂ S Safety Seminar (NM OCD, WERC)	Farmington, NM	5/28/03	19	17 (89%)	
Delaware Basin Fuzzy Expert Exploration Tool	Roswell, NM	8/27/03	22	19 (86%)	25%
Total FY03 Attendance (11 events, plus one reported by Texas)			402	340 (85%)	
Reducing Exploration Risk With The Fuzzy Expert Exploration (FEE) Tool (PRRC)	Albuquerque, NM	10/28-29/03	Workshops Scheduled During 1st Qtr FY04		
Electronic Resources for NM Production Data	Roswell, NM	11/13/03			
9 th Annual Permian Basin CO ₂ Conference (Texas)	Midland, TX	12/10-12/03			

Application: Repeat attendance (% of attendees previously attending a regional workshop) =16%.
 35% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond "Yes." (Based on data from 11 workshops)

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	1	78	46 (59%)	211	14,891	85,948	Semiannual newsletter = 3,400 plus online
2 nd Qtr	3	96	87 (91%)	229	17,316	86,123	
3 rd Qtr	6	206	188 (91%)	198	17,918	85,054	
4 th Qtr	1	22	19 (86%)	158	17,584	65,632	
FY03 Total	11	402	340 (85%)	796	16,927	80,689	
FY03 Avg. Attendance = 37 vs. 36 in FY02 (11 Actual vs. 6 Originally Planned)							
FY04 Workshop Plans: 6+ (2 plus coop effort in 1st Qtr)							

Regional Website: Usage in terms of user sessions increased to near 18,000 sessions per month by the end of FY03. Page views in three of four quarters exceeded 85,000 page views per month. Beyond routine calendar and maintenance functions, most effort is related to improving access to public domain data.

Workshops/Events: Overall attendance increased several fold over FY02, reflecting good response to both the Electronic Resources workshop series and the H₂S Safety workshop series. The well-attended Produced Water workshop included several presentations from DOE-supported projects. Strong attendance at the CEED CO₂ conference, which the region co-sponsored along with the Texas Region and others, was reported by the Texas Region. Attendance at the Mesa Verde workshop was lower than experienced for prior, similar geological events.

Resource Center: The region issued an updated version of the NM Well Location CD product and also makes a CD of the Mesa Verde workshop available to industry. In the past year, staff has created several new databases, including databases for inactive wells (plugged, dry holes, etc.), well activity (name, operator changes, permits to drill, etc.), lease sale notices, and lease sale information. Additional data is also being collected for historical production data, which is not easily available in electronic format. The premier new database is the State Land Office database and website, currently accessed via <http://daihatsu.nmt.edu/slo/>. This website allows users to access relevant information on state lands, and links that data to production data from the GO-TECH website. New Mexico's Oil Conservation Division plans on making more data available online. Staff will work with them to make the databases user friendly. Staff is also working on improving data products by allowing for more summaries, such as totals for fields or formations or operators.

Outreach/Contacts/Newsletter: Overall contact level increased 17% compared to FY02. Staff continues their tradition of proactively visiting producers in both southeast New Mexico and the San Juan Basin. Martha Cather has been active in a variety of projects related to produced water. Currently there are DOE-funded projects in both major producing regions, and Martha has spoken with many producers about the various issues involved. Outreach effort for another DOE-supported project has involved discussions with producers, especially in southeast New Mexico, about corrosion and scale issues. Robert Lee's position on New Mexico's Oil Conservation Commission also helps the region stay aware of producer issues. The semi-annual PRRC newsletter, which has a dedicated PTTC section, is circulated to about 3,400 individuals.

Problem Identification: The region relies on feedback from workshop participants, PAG input, industry visits and ongoing research projects at New Mexico Tech to determine regional emphases. From the onset there has been a strong data interest by producers. Technical interest in produced water issues remains high.

Follow-up: Recent examples of products developed in response to industry demand include the Well Location CD and the State Lands Office database. In just the first month of operation, the State Lands website is experiencing 32 visits per day and usage is expected to grow rapidly. Staff continues working to enter reliable cumulative production data in the production databases. Those making inquiries to staff frequently comment on the "breadth and ease of use" of the regional data products.

Case Studies: Ongoing efforts.

PTTC Texas Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (10 events, plus one reported by Southwest)			349	325 (93 %)	
Technical Sessions at Permian Basin Oil Show	Odessa, TX	10/15-16/02	170	150 (88%)	
Coalbed Methane Potential in Texas, Louisiana and Mexico (GCAGS)	Austin, TX	10/30/02	38	35 (92%)	
Louisiana DNR's SONRIS Database (C Gulf)	Houston, TX	11/14/02	Organized & reported by Central Gulf		
2002 CEED CO ₂ Conference (Southwest, CEED, SPE, & others)	Midland, TX	12/10-11/02	240	230 (96%)	85%
Electronic Resources for NM Producers (Southwest)	Midland, TX	2/27/03	Organized & reported by Southwest		
Structure & Stratigraphy of South Texas and Northeast Mexico (S TX Geol. Soc.; GCSEPM)	San Antonio, TX	4/10-11/03	300	270 (90%) est.	
Well Cuttings	Houston, TX	4/15/03	11	8 (73%)	0%
Hydraulic Fracturing (Central Gulf)	Shreveport, LA	4/23/03	Organized & reported by Central Gulf		
Putting the Internet to Work/ Profitable Geosciences	Tyler, TX	4/30/03	30	30 (100%)	
Electronic Resources for NM Prdn. Data (Swest)	Midland, TX	4/30/03	Organized & reported by Southwest		
New Methods for Locating and Recovering Remaining Hydrocarbons in the Permian Basin (BEG, CEED)	Midland, TX	5/29/03	85	75 (88%)	28%
Reservoir Fluids (Core Labs)	Houston, TX	6/25/03	100	90 (90%)	1%
Inexpensive, Rapid Cross-Section Generation Utilizing Riley Electric Log's Raster Log Images and Divestco's CrossLog Suite™ Software (Lunch and Learn)	Houston, TX	8/7/03	22	22 (100%)	
Produced Water & Associated Issues	Midland, TX	8/26/03	27	26 (96%)	
Produced Water & Associated Issues	Farmers Branch, TX	8/27/03	14	14 (100%)	
Understanding Paraffin and Asphaltene Problems in O&G Wells	San Angelo, TX	9/3/03	17	17 (100%)	
Total FY03 Attendance (12 events, plus 4 reported by other regions)			1,054	967 (92%)	
Low-Cost Rod Pump Control (eP Solutions) lunch	Midland, TX	10/16/03	Workshops Scheduled During 1st Qtr FY04		
Low-Cost Rod Pump Control (eP Solutions) lunch	Houston, TX	10/21/03			
9 th Annual Permian Basin CO ₂ Conference (Southwest)	Midland, TX	12/10-12/03			

Application: Repeat attendance (% of attendees previously attending a regional workshop) =29%.
 24% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond "Yes." (Based on data from 18 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	3	448	415 (93%)	1,565	4,856	8,679	Qtrly newsletter = 2000 + Midland paper, associations Major increase page views Aug/Sep
2 nd Qtr	0	0	0	894	5,221	9,493	
3 rd Qtr	5	526	473 (90%)	1,341	5,378	11,607	
4 th Qtr	4	80	79 (96%)	1,029	7,248	31,258	
FY03 Total	12	1,054	967 (92%)	4,829	5,676	15,259	
YTD Avg. Attendance = 88 vs. 35 in FY02 (12 Actual vs. 9 Originally Planned)							

FY04 Workshop Plans = 6 definite (but 3 scheduled already in 1st Qtr); estimate 9 for year

Regional Website: Usage of the PTTC-Texas website and outreach program has increased every year. Traffic to technology-related portions of TIPRO's Energy Connections site as well as industry sites hosted on TIPRO servers are reported as expanded outreach. Usage for the outreach websites continues to grow each year, logging 1.6 million user sessions during 2002 and approaching the 2 million mark for 2003. This expanded online outreach program maintained by TIPRO is the only program of its kind dedicated to providing services for petroleum-related sites in Texas. Late in FY03 the region began an online discussion forum. Beyond helping producers, hopes are that discussions will provide topics for future workshops and topical working groups.

Workshops/Events: Overall attendance increased three-fold compared to FY02. High attendance at two large cooperative events, CEED's CO₂ Conference and the Structure/Stratigraphy meeting of the South Texas Geological Society, were primarily responsible, but attendance was also strong at several other events. Staff is increasingly exploring the lunch and learn concept, realizing synergies with BEG's core facility in Houston. Other workshops included: Produced Water workshops in Midland and Farmers Branch, a Paraffin/Asphaltene workshop in San Angelo, the BEG/University Lands workshop on Locating and Recovering More Hydrocarbons, the Gulf Coast Coalbed Methane workshop held in conjunction with 2002 GCAGS annual meeting, Putting the Internet to Work and Profitable Geoscience, Well Cuttings, and Reservoir Fluids. Other significant events were Kiker's participation in the U.S. and Russia Commercial Energy Summit in Houston. He also spoke about wellbore management during Independents' Day at AAPG/SPE's joint meeting in Long Beach. The Region also co-sponsored the first technical session for the broadly attended Permian Basin Oil Show.

Resource Center: Through BEG extensive data and information resources are available for those willing to come to Austin. An online searchable database developed by BEG of all geologic and geophysical materials helps users know what is available for them in BEG's facilities.

Outreach/Contacts/Newsletter: Contact activity increased nearly 80% compared to FY02, approaching 20 per working day. A significant number of internet-related contacts are also made by TIPRO. Mentor Bob Kiker is well-networked in the Permian Basin area through association and SPE contacts. As time goes on, staff is also developing cooperative relationships with regional groups, like the Tyler Geological Society. Staff exhibits at major events, such as TIPRO and Alliance meetings and the Permian Basin Oil Show. Kiker now has regular space in the *Midland Reporter Telegram* (circ. 25,000), plus the region gets periodic space for workshop announcements in association newsletters. Staff publishes a quarterly newsletter, *Producer News*, that has circulation of more than 2,000.

Problem Identification: The region relies on feedback from workshop participants, PAG input, resource center contacts and "targets of opportunity" to develop activities each year.

Follow-up: Feedback from Western Falcon indicates that an increasing number of companies are using polyethylene liners to assist them in reducing wellbore tubular failures due to corrosion and mechanical wear. Initially presented in the wellbore management workshops, information has also been incorporated in a case study in *Petroleum Technology Digest*, in the Produced Water & Associated Issues workshops, and on the national website. This exposure, combined with sound marketing and continued success in field applications has led to a 280% increase (www.pttc.org/impact/impact_connecting.htm) in Western Falcon's customer base, the vast majority of which are small independents.

Case Studies: On a consulting basis, Bob Kiker and Steve Melzer are assisting HQ in nurturing and helping industry develop case studies for the *Petroleum Technology Digest*.

PTTC West Coast Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY02 Attendance (13 events)			763	573 (75 %)	
Stripper Well Technologies	Valencia, CA	10/17/02	58	37 (64%)	81%
New Well Logging Methods	Valencia, CA	11/21/02	73	40 (55%)	80%
Oil & Gas Supply Demand Forecast—Legal, Environmental and Taxation Issues—Ann. Forum	Los Angeles, CA	12/6/02	56	36 (64%)	83%
Monitoring & Reducing Optg Costs, Pumping Wells	Los Angeles, CA	12/6/02	29	20 (69%)	70%
Water Reduction Through Polymer Treatments	Valencia, CA	1/23/03	51	40 (78%)	90%
Thermal Oil Recovery in California	Valencia, CA	2/20/03	68	56 (82%)	73%
Instrumented Field and Reservoir Definitions	Valencia, CA	3/27/03	36	15 (42%)	67%
Effective Ways to Cut Operating Expenses	Los Angeles, CA	4/17/03	39	31 (79%)	94%
Independents Days @ SPE/AAPG Joint meeting	Long Beach, CA	5/22/03	37	30 (81%)	
Water Control Work Group (PUMP contract)	Los Angeles, CA	6/18/03	10	7 (70%)	100%
COMET 2003 (on campus training)	Los Angeles, CA	6/22-27/03	21 students, 3 teachers, 1 professor Univ. AK		
Water Control Work Group (PUMP contract)	Bakersfield, CA	7/9/03	13	9 (69%)	78%
Exploration & Development Potential of California Monterey and Deeper Rocks (workshop & field trip)	Camarillo, CA	8/20/03	51	27 (53%)	74%
Exploration & Development Potential of California Monterey and Deeper Rocks (workshop & field trip)	Camarillo, CA	8/21/03	37	21 (57%)	71%
Trouble Shooter's Forum	Valencia, CA	9/18/03	25	14 (56%)	86%
Total FY03 Attendance (14 events + COMET)			583	383 (66%)	
Economics of Oilfield Automation	Valencia, CA	10/30/03	Workshops Scheduled During 1st Qtr FY04		
Technology and Economics of Horizontal and Multilateral Wells	Valencia, CA	11/25/03			
Economic Optimization In Marginal Fields	Los Angeles, CA	12/18/03			

Application: Repeat attendance (% of attendees previously attending a regional workshop) =79%.
 42% of producers answering the question on the workshop feedback form: Have you used any new technologies gained through PTTC events? respond "Yes." (Based on data from 50 workshops).

FY03 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	4	216	133 (62%)	98			No newsletter – only CIPA announcements
2 nd Qtr	3	155	111 (72%)	104			
3 rd Qtr	3	86	68 (79%)	95	1,727	4,273	
4 th Qtr	4	126	71 (56%)	99	1,961	6,067	
FY03 Total	14	583	383 (66%)	396	1,844	5,170	
FY03 Avg. Attendance =46 vs. 59 in FY02 (14 Actual vs. 13 Originally Planned)							
FY04 Workshop Plans: 11 + COMET (3 scheduled during 1st Qtr)							

Regional Website: Statistics are unavailable for the first two quarters. The most popular postings are workshop presentations. Staff strives to post authorized presentations (approval sought from authors) within two weeks after a workshop. This allows workshop attendees to revisit topics that were discussed or allows those unable to attend the workshop a chance to learn from the material.

Workshops/Events: Overall attendance decreased 24% compared to FY02, following a similar decline the year before. Industry conditions may be partially responsible, but there is evidence that holding workshops once in a central location, versus the early philosophy of repeating them in Bakersfield and the Los Angeles areas, has adversely affected attendance. Staff and budget limitations leave no other option though. Topics covered a broad range of engineering- and operations-oriented topics. PAG involvement in topic selection and actually serving as moderators in the workshops serves as a model for other regions. Staff is very effective at working presentations/results from DOE-funded R&D into regional events. Annual events include the Anniversary Forum in December in Los Angeles and the Trouble Shooters Forum late in the fiscal year. Another major accomplishment was Independents' Day at the Joint SPE/AAPG Western Regional Meeting in Long Beach. The region also conducted three small group discussions on matters related to effective ways to reduce operating cost. These round table forum discussions were found to be quite stimulating in terms of data and information exchange among producers and the vendors.

Resource Center: For the CEC/PUMP project, our troubleshooters visited a number of fields and highlighted problem areas ripe for technology improvements. Primarily, beside the matter of ineffective artificial lifts and excessive power consumption, the trouble shooters have noted high water production and wellbore plugging due to paraffin buildup as the two areas for further investigation.

Outreach/Contacts/Newsletter: Iraj Ershaghi continues his strong networking with state agencies, which resulted in \$300K of funding from the California Energy Commission becoming available in spring 2003. CEC funds are primarily being used as cost share for PTTC's DOE-funded PUMP project. His efforts in developing Independents' Day at the SPE/AAPG Joint meeting enhanced PTTC's already strong reputation in California. He also developed a paper on PTTC's PUMP work in California for Don Duttlinger to deliver before the International Petroleum Environmental Conference in Houston (October 2003). The region does not have a newsletter, instead relying on announcements in CIPA's weekly E-mail alert

Problem Identification The region, in the design of topical workshops, relies heavily on input from past workshop participants and the PAG members. A balanced set of workshops was presented to address issues related to well bore, reservoir and surface facilities.

Follow-up: In prior years, PTTC had worked with EPRI-PEAC to study electric power consumption issues. Partly as a result of that study, CEC made significant funding available to industry through Global Energy Partners for installation of pump-off controllers, variable frequency drives, or other power-saving measures. In 2003 PTTC signed a tech transfer contract with Global Energy Partners to assist them in publicizing the CPUC rebate program by conducting workshops to educate producers about ways and means for cutting power cost.

Case Studies: Results of a DOE sponsored field project (Venoco Inc. in South Ellwood Field, Santa Barbara Channel) focused on advanced reservoir characterization technologies was presented in an August 2003 workshop. Material will be published in concise form within the *Petroleum Technology Digest* in *World Oil* in December 2003.

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**Petroleum Technology Transfer Council
Board of Directors**

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(Note: Officers serve 1-yr. terms that extend through the next annual meeting of the Board)

DIRECTORS**REPRESENTING:***REGIONS:*

Appalachian	Bernie Miller	Bretagne Corp.	Lexington, KY
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Southwest	David Boneau	Yates Petroleum Corp.	Artesia, NM
North Midcontinent	Mark Shreve	Mull Drilling Co., Inc.	Wichita, KS
South Midcontinent	A.M. Mac Alloway	Tony Oil Company	Tulsa, Ok
Texas	Gene Ames III	Ames Energy Corp.	San Antonio, TX
West Coast	Mark Kapelke	Tidelands Production Co.	Long Beach, CA
Regional Lead Orgs.	Dave Morse	Illinois Geological Survey	Champaign, IL

ORGANIZATIONS:

Indep. Petrol. Assoc. Of America	Steve Layton	IPAA	Los Angeles, CA
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American Assoc. of Pet. Geologists	Chuck Noll	Copano Energy	Houston, TX
Society of Explor. Geophysicists	Hugh Rowlett	ConocoPhillips	Houston, TX
Society of Petroleum Engineers	Michael Gatens, III	MGV Energy, Inc.	Calgary, Canada

INDUSTRY SECTORS:

Service Cos.	Jay Haskell	Schlumberger Oil Field Srvcs.	Caracas, Venezuela.
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Representing:

Appalachian OH	David Wozniak	Belden & Blake Corp.	North Canton,
Central Gulf	Bob Meredith	Vada Energy, LLC.	Port Allen, LA
Eastern Gulf	Robert Schneeflock	Paramount Petroleum Co.	Jackson, MS
Midwest	Bryan J. Dicus	Elysium Oil Company.	Crossville, IL
Rocky Mountain	George Fancher	Fancher Oil Co.	Denver, CO
Southwest	John Corbett	Northstar Oil & Gas	Farmington, NM
North Midcontinent	Nick Powell	Colt Energy, Inc.	Fairway, KS
South Midcontinent	George Fulco	Devon Energy	Oklahoma City, OK
Texas	Craig Clark	Apache Corporation.	Houston, TX
West Coast	James C. Hall	Drilling and Production	Torrance, CA
Regional Lead Orgs.	Douglas Patchen	West Virginia University	Morgantown, WV
IOGCC	Tom Richmond	Montana Board of Oil & Gas	Billings, MT
SEG	Robert Graebner	The Information Store	Houston, TX
SPE	Joe Franz	Schlumberger	Pittsburgh, PA
Service Cos.	Mo Cordes	Schlumberger	Sugarland, X
Major E&P Cos.	Larry Risley	Texaco, Inc.	Houston, TX

Management & Budget (M&B) Committee

Position:

M&B Committee Chair, and Board Vice Chair	Brook Phifer	Littleton, CO
Current Board Chair	James Bruning	Fort Smith, AR
Immediate Past Board Chair	WM. Clark Southmayd, Jr.	Tulsa, OK
M&B Committee Member	Brian Sims	Madison, MS
M&B Committee Member	Gene Ames	San Antonio, TX
Executive Director (ex-officio, non-voting)	Don Duttlinger	Houston, TX

Notes from the by-laws:

- The terms served by Alternate Directors are the same as for the Directors they represent.
- Officers do not have Alternates. Officers may succeed themselves.
- Members of the Nominating Committee and the Management & Budget Committee who are Officers have terms on these committees that are linked to their terms as Officers. Other committee members have terms that are concurrent with their Board membership.

Petroleum Technology Transfer Council

Guide for Professional and Ethical Conduct

The Petroleum Technology Transfer Council (PTTC) is a national not-for-profit organization that is tax-exempt under Section 501(c)(3) of the IRS code. PTTC is not a membership organization, although there are volunteer members of the Board of Directors, its committees, and the Producer Advisory Groups. This Guide for Professional and Ethical Conduct applies to all members of those groups, as well as the national and regional PTTC staff and contractors. These dedicated professionals recognize their responsibility to PTTC and those it serves in carrying out the organization's mission:

"PTTC benefits the nation by helping U.S. independent oil and gas producers make timely, informed technology decisions."

PTTC, embodied by its representatives and staff, recognizes its responsibility to pursue its mission while maintaining the high standards of professional and ethical conduct summarized below.

- **Ethical Behavior:** PTTC will be guided in all of its affairs by high standards of business ethics and professional conduct, striving to maintain honesty, integrity, fairness, impartiality, and trust. PTTC will strive to avoid making false, misleading, or unwarranted statements or representations.
- **Service, Quality, Professionalism:** Every PTTC action and activity will be performed in a manner that fosters the organization's mission. PTTC will professionally deliver products and services of the highest possible quality.
- **Confidentiality:** When those being served by PTTC require secrecy, PTTC will treat as confidential any knowledge of proprietary data or information as directed by those providing such data or information.
- **Referrals, Self-Interest:** For those it serves, PTTC will provide unbiased referrals to the best solution providers for their problems. PTTC will deny any use of its structure or program for individual or organizational self-interest. Any potential conflict of interest that might influence (or appear to influence) the judgment, fairness, and quality of PTTC's performance in any way will be disclosed immediately.
- **Copyrights, Cooperation:** PTTC will honor the copyrights and other intellectual property rights of speakers, authors, and other sources of published information. PTTC will appropriately recognize the work done by others, avoid plagiarism, and avoid accepting credit due to others.
- **Opportunity:** PTTC will make every effort to ensure that its structure and programs are carried out without bias due to race, religion, gender, age, national origin, or handicap.
- **Public Welfare:** PTTC will hold paramount the safety, health, and welfare of the public in all of its programs and activities, and act in accordance with all applicable laws.

Note: Statement adopted by the PTTC Board of Directors on December 6, 1998

Petroleum Technology Transfer Council

Conflict of Interest Policy Statement

The Petroleum Technology Transfer Council (PTTC) strives to carry out all of its activities in accordance with the “Guidelines for Professional and Ethical Conduct,” as adopted by the Board of Directors on December 6, 1998. To further clarify PTTC’s position on issues related to conflict of interest and confidentiality, the Board hereby adopts this “Conflict of Interest Policy Statement.”

Need for Policy

Most individuals involved with PTTC have multiple interests and affiliations and many hold various positions of responsibility within the industry and community. In matters related to the mission of PTTC, Board members and alternates (which includes elected officers) are expected to uphold the interests of the Council and its obligations to the public trust.

This policy applies only to conflicts of interest in personal or business interests; it does not apply to political, philosophical, or professional differences of opinion. It recognizes that both real and apparent conflicts of interest sometimes occur in the course of conducting PTTC affairs. As a not-for-profit educational organization that is tax-exempt, it is important for PTTC to avoid even the appearance of a conflict of interest.

Conflict of Interest Policy

PTTC adopts this policy to serve as an official process through which any potential conflict of interest problems can be rendered harmless to all concerned. The policy requires that the following steps are taken:

- A. All Board members and alternates shall disclose any real or apparent conflicts of interest in connection with PTTC’s activities that they discover, or that have been brought to their attention. In this event, a written description of the situation shall be provided to the Executive Director who will take appropriate steps as needed, under the guidance of the Management and Budget Committee.
- B. Any Board members and alternates making such a disclosure is prohibited from being involved in PTTC affairs that are specifically related to such conflicts, including making motions, voting, executing agreements, or taking any other similar action.
- C. The official meeting minutes shall reflect that such disclosure was made, and that the Board member or alternate was absent from any discussion and vote on the matter in question.
- D. A copy of this conflict of interest policy shall appear in the orientation materials for new directors and shall be included in all official reference materials for the Council.

Note: Statement adopted by PTTC Board of Directors on March 30, 1999



Statement of Identity

The Petroleum Technology Transfer Council (PTTC) enables independent operators to make timely, informed exploration and production (E&P) decisions through practical, targeted information and connections to technology solutions. As a regionally focused national non-profit organization, PTTC has an 8-year record of growth in meeting the technology needs of US independent oil and gas producers. PTTC's primary customers are independent producers, who drill 85 percent of all US wells. As a group, they produce 60 percent of US natural gas and 40 percent of crude oil.

Independents face technology decisions every day, such as whether to address an opportunity or problem with technology, what solution to use, whether it is cost-effective and how to use it. The PTTC program helps producers make these decisions through its three core services. First, it helps identify and clarify producers' problems and makes them aware of technology opportunities. Second, it educates producers about technology solution options. Third, it connects producers to these solution sources. Thus, by providing problem identification, education, and connections, PTTC achieves its mission:

"To strengthen the U.S. independent oil and natural gas industry for the benefit of consumers and the nation by assisting producers make timely, informed technology decisions."

Through its 10 Regional Resource Centers, PTTC offers expert assistance, information resources, and referrals. Services also include demonstrations of E&P software solutions, and technology workshops held around the country on a variety of topics. In addition, PTTC's newsletters, websites, case studies and reports cover a range of information and databases.

All PTTC products and services – nationally and regionally – can be grouped into program lines: (1) exploration (2) drilling & completion, (3) development & reservoir, (4) operations & production, and (5) environmental.

PTTC is more than just an information clearinghouse. It supports producer technical decision processes – from early awareness of problems and opportunities to the point that the customer selects the right solution provider.

In addition to independent producers, PTTC focuses on two other market segments. The first group, technology solution providers, include service companies/vendors, the US Department of Energy, national labs, consultants, the Gas Research Institute, academia, professional societies, industry R&D organizations, etc. The other group is PTTC's supporters/funders.

PTTC delivers value to all the market segments it serves. Solution providers benefit when PTTC educates producers about technologies. Producers benefit when PTTC helps solution providers understand the needs of independent producers. Both groups benefit when technologies solve problems, leverage opportunities, and strengthen the industry.

The nation and energy consumers benefit when US petroleum supplies are made more reliable and secure by industry's improved access to E&P technology. , PTTC is the independent petroleum industry's

"Bridge to Solutions"

PTTC is primarily funded by the U.S. Department of Energy's Office of Fossil Energy through its National Energy Technology Laboratory.

Petroleum Technology Transfer Council

PTTC's Goal Categories

PTTC has chosen five categories of goals to direct its actions. Each is captured in a single word, which makes them more memorable; and each has several vision statements describing what success will be like.

1. AWARENESS

- PTTC is aware of its customers' problems and understands the context/underlying issues.
- Independent producers are aware of PTTC and its services at their local level, as well as nationally.
- Independents understand their technology needs, focusing beyond the symptoms of their problem.
- Independents are aware of the range of solutions available and of the benefits/risks of each.
- Technology solution providers are aware of PTTC and that it can help them reach independents.
- Solution providers understand the problems of independent producers, and their value as a market.

2. CONNECTIONS

- Independent producers rely on PTTC for connections to a range of technology solution options.
- Solution providers rely on PTTC for contacts with independent producers and access to that market.
- Independents learn how to successfully apply technologies as a result of PTTC referrals.
- Independents credit PTTC for their success in finding the right sources for technologies/information.
- Technology solution providers credit PTTC for improving their access to independents.

3. PERFORMANCE

- Producers make inquiries to PTTC as a result of its workshops, newsletters, websites, etc.
- Independent producers contact PTTC more than once for help, and request new products/services.
- Case studies about U.S. field-tested technologies are offered to PTTC for industry dissemination.
- Independents publicly commend PTTC's products/services and refer other producers to the RLOs.
- Technology solution providers offer financial support for PTTC events and other functions.
- Other groups want to conduct jointly-sponsored events or activities with PTTC.

4. CREDIBILITY

- PTTC is perceived by independents as the best choice for access to practical, real-world solutions.
- PTTC is recognized by technology solution providers as the best pathway to reach independents.
- The Board, PAGs, and committees have active participation and effective volunteer leaders.
- The Dept. of Energy values PTTC's unique abilities to strengthen the domestic oil and gas industry.
- PTTC has high name recognition in the industry and a positive image in outside markets.

5. FINANCES

- PTTC has achieved financial strength, which engenders confidence about the organization's future.
- PTTC activities are not limited by the number of customers that it can serve
- PTTC has the required cash flow and financial reserves to explore new outreach projects.
- RLOs receive sufficient funds on a timely basis so that regional programs remain effective.
- PTTC can charge enough for services and products to make them generally self supporting.

Note: Quantifiable objectives are being developed that will measure PTTC's progress toward achieving its goals.

Petroleum Technology Transfer Council

PTTC Program Lines

Since PTTC was formed in 1993, its programs have mainly focused on transferring individual technologies. Although very effective, it has been difficult to identify gaps, overlaps, or conflicts in various technologies across regions and topics. As part of the new business model, PTTC has selected five program lines that encompass the services and products being delivered to its customers. They were chosen to be general enough to survive for the long term, yet provide flexibility by topic and region:

PTTC Program Lines:

- **Exploration**
- **Drilling and Completion**
- **Development and Reservoir**
- **Operations and Production**
- **Environmental**

The transition from individual technology focus to program lines will be initiated during FY2000. Working together, the HQ and RLO staff will start finding ways to accomplish the following steps:

- Organize current products and services by program line.
- Identify and prioritize gaps in needed products and services, according to regional and other factors.
- Take action to close high-priority gaps by assembling the required resources (contacts with solution providers, workshop speakers, etc.) to provide comprehensive services/products in each program line.
- Develop quality assurance criteria to guide performance of each service and product.

The concept is that resources (information, reports, network of experts, etc.) would not necessarily be required in every region, but somewhere within the national PTTC organization. Each program line will include not only services, but also products. PTTC is beginning to build up more marketable products as it captures the results of regional workshops and other activities.

Several benefits are expected from the establishment of program lines:

- Having memorable names for program lines makes it easier for customers to find PTTC's services.
- It should be easier to measure effectiveness, completeness, and quality of products and services.
- HQ can better monitor PTTC's national and regional program, enabling efficiencies through streamlining and better sharing across regions.
- PTTC programs can be marketed more effectively to specific market segments.
- The system should enhance inter-regional technology transfer activities and reduce duplication of programs that can be more efficiently packaged as a generic product/service.
- Program lines should help emphasize PTTC's marketing message.
- It demonstrates PTTC's commitment to serve independent oil and gas producers with solution options that span across the total E&P technology spectrum.