



FY99 TECHNICAL PROGRESS REPORT

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SUBMITTED TO:

U.S. DEPARTMENT OF ENERGY'S
OFFICE OF FOSSIL ENERGY

FOR WORK PERFORMED UNDER THE
NATIONAL PETROLEUM TECHNOLOGY OFFICE AND
FEDERAL ENERGY TECHNOLOGY CENTER

IDENTIFICATION NO. DE-FC26-98BC15118

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DECEMBER 1, 1999



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PETROLEUM TECHNOLOGY TRANSFER COUNCIL
TECHNICAL PROGRESS REPORT - FY99

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EXECUTIVE SUMMARY

During FY99, the Petroleum Technology Transfer Council (PTTC) continued pursuing its mission of helping U.S. independent oil and gas producers make timely, informed technology decisions. PTTC's national organization has active grassroots programs that connect with independents through its 10 Regional Lead Organizations (RLOs). These activities – including technology workshops, resource centers, websites, newsletters, and other outreach efforts – are guided by regional Producer Advisory Groups (PAGs). 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 effort.

This technical progress report summarizes PTTC's accomplishments during FY99, which lay the groundwork for further growth in the future.

National-Level Program

PTTC's Board of Directors, met three times during FY99 -- one of those as a joint meeting with the RLO Directors. In late 1998, recognizing desperate conditions in the industry, the Board instituted an Industry Crisis Action Plan that refocused regional efforts on survival-oriented issues. The Board also adopted two policy statements to better guide its activities. The "Guide for Professional and Ethical Conduct" was adopted by the Board on December 6, 1998. (See Appendix D) At the recommendation of PTTC's auditors, a "Conflict of Interest Policy Statement" was adopted by the Board on March 30, 1999. (See Appendix E)

In an expected transition in Board leadership, Leo Schrider became Chair in March 1999, replacing Bob Nance; and Clark Southmayd became Vice Chair. To improve communication, the Board authorized adding a new position (on an ex officio, non-voting basis) to represent the RLOs. Charles Mankin, South Midcontinent Region, was selected by the RLOs to serve the first one-year term, beginning in FY00. Executive Director Deborah Rowell informed the Board on November 4, 1999 of her intention to resign the position, although it will not be effective until June 30, 2000. Having accomplished many of her goals in the establishment of PTTC, she wanted to give the Board ample time to make an orderly leadership transition. A search committee has been formed under the chairmanship of Bob Nance, PTTC's Immediate Past Chair.

In 1999, PTTC maintained program continuity by extending the RLO contracts through April 2003. They were originally scheduled to expire at the end of FY99. HQ received confirmation from both PAGs and RLOs of their continued interest before recommending contract extensions. Regional activities continued far above the core technology transfer functions during FY99. Further growth is forecast for FY00, although limited by funding levels.

An updated needs assessment report, *Technological Priorities of Independent Oil and Gas Producers*, was released by HQ, based on 1998 survey responses. The results, combined with extensive industry input in the regions, keeps PTTC programs focused on the highest priority needs of independent producers. The categories used in the survey are essentially the same as the five program lines that PTTC plans to launch in FY00. (See Appendix H).

In a joint effort with Gulf Publishing, PTTC released a new industry publication in 1999, the *Petroleum Technology Digest (PTD)*. Presenting nine case studies in a professionally packaged publication, *PTD* was distributed as a supplement with the September 1999 issue of *World Oil*. It was

mailed to the North American subscribers of *World Oil* who are independent producers, as well as being distributed through PTTC channels. The total audience receiving *PTD* reached over 10,000 readers. Advertising was sold by Gulf Publishing, which was also responsible for layout and printing. PTTC worked with vendors and producers to develop the case studies, routing them through an informal screening committee. Favorable industry response has led to plans to publish two more issues in 2000.

Another new publication was issued by the HQ office in August 1999 – *Solutions From the Field*. It was released as a compendium of technical ideas, solutions and contact information from 14 regional workshops, updating the *Best of PTTC Workshops* report issued in 1997. The revised format allowed more technology insights to be summarized. PTTC now conducts more than 100 workshops a year, so capturing technology insights from these workshops becomes ever more important. At least two new workshop summaries are being added each month to the national PTTC website, building an archive of valuable technology insights. Hardcopy editions will also be released periodically with updates.

Circulation of the quarterly newsletter, *PTTC Network News*, grew to about 7,000 individuals – with nearly two-thirds from the exploration and production (E&P) sector. The newsletter continued its goal of adding more technical content. The national website experienced about 6,000 user sessions per month in FY99, averaging 10 minutes each. The content has been continually improved – adding a site map, publication order form, and new gateway pages to the regional websites. It also provides timely calendar information, an archive for technology insights, and useful links to other organizations. Frequent press releases provide timely alerts to industry about key events, important developments and new products resulting from PTTC's efforts.

In November 1998, PTTC released a *Petroleum E&P Software Sampler* on CD-ROM. Developed by Sandra Mark of the Rocky Mountain Region working under contract for HQ, it presents information in a searchable format about software packages donated to PTTC's regions. The sampler has helped RLO staff to demonstrate software and can be used by operators to help determine which software products may be appropriate for their needs. The CD-ROM was originally sold for a nominal fee, but is currently being distributed free of charge. PTTC has not yet committed to developing an updated version.

During FY99, PTTC supported technology transfer from DOE R&D projects in the areas of: (1) fractured reservoirs, (2) microbial technologies, (3) coiled tubing safety, and (4) advanced stimulation for gas storage operations. Additionally, PTTC coordinates often with the Natural Gas and Oil Technology Partnership and the Rocky Mountain Oilfield Test Center. When opportunities arise, PTTC works cooperatively with other groups, including American Geological Institute, Drilling Engineering Association, Interstate Oil and Gas Compact Commission, and Gas Research Institute, to name a few.

Regional-Level Program

In FY99, PTTC's regions held a total of 128 workshops drawing 5,948 individuals. Compared to the prior year, this represents a 28% increase in the number of workshops and a 34% increase in attendance. Despite adverse industry circumstances, average attendance held steady in the range of mid-40s, with around three-fourths of attendees from the E&P industry. Fifteen of those workshops, which drew about 800 people, were survival-oriented events developed by the regions as part of PTTC's Industry Crisis Action Plan. A portion of the increased activity can be attributed to ever-expanding cooperation with other groups. FY00 plans project about the same level of activity as in FY99, which is approximately the maximum feasible with existing funding levels. Some regions are experimenting with

new delivery mechanisms, such as on-line training webcasting, and video archiving to reach more people.

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. Total industry contacts in FY99 averaged approximately four per day per regional resource center, about the same as FY98 levels. Four regions reported more than 1,000 contacts during the year.

Both Internet and software training courses are offered within the regions. Combined, the regions conducted 30 software training courses, drawing nearly 400 people; plus another seven Internet training workshops, drawing 140 people. Internet training is also offered on-line. The computer resource center in the Rocky Mountain Region became fully operational during FY99. Supported by PTTC, the American Association of Petroleum Geologists, Colorado School of Mines, and private donors, it contains both PC and Unix labs. Reflecting the priorities of local producers, this center provides the most software training within PTTC—with 20 software/Internet courses during FY99 and an active schedule into FY00.

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 with the ONGARD database and the North Midcontinent Region's support of the Digital Petroleum Atlas. Under special circumstances requiring Board approval, PTTC's regions can (and are) developing special purpose databases, within funding constraints. For example, the Midwest Region is developing a core and waterflood database, while the Michigan outreach effort includes a log and horizontal well database. The Eastern Gulf region's Jackson satellite is almost exclusively focused on making Mississippi oil and gas data available electronically. Where appropriate, regions develop information products that provide a service to industry and generate moderate revenues for PTTC. The Louisiana Desktop Well Reference, a CD-ROM product containing production data in a GIS environment, has been most successful in terms of revenue, bringing in over \$12,000 in FY99. Its success has spawned interest from some other states/groups.

Various outreach programs also emanate from the resource centers. The West Coast Trouble Shooters program relies on industry volunteers to interact with industry. At the University of Southern California, PTTC partially supports the California Oil Mentoring Entrepreneurial Training (COMET) program. This is an education initiative that encourages student internships with independent petroleum companies. The North Midcontinent staff support the Kansas CO₂ initiative, and the South Midcontinent staff are involved with the Oklahoma Marginal Well Commission's Trade Fairs. Texas began a pilot Mentor program in the Permian Basin. Many other examples of cooperative interaction also exist.

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 and HQ has improved consistency in reporting website statistics. Six regions publish newsletters with distribution totaling about 19,000 people. Most are new efforts started under PTTC, but some continue the newsletter tradition of the RLO organization. Typically, newsletters are posted on the website. Some regions also develop special electronic versions more frequently for their websites.

Although not yet quantified, many individuals attend PTTC events repeatedly, demonstrating that they find value in the experience. Anecdotal success stories are still few in number since industry does not readily share them, but several examples of technology applications are included in this report. A significant percentage of producers who attend regional workshops respond “Yes” on feedback forms when asked if they are applying technologies based on knowledge gained through PTTC.

By all accounts, PTTC is connecting with more and more independent oil and gas producers throughout the country and making a positive difference

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 1994 as a national not-for-profit organization. Well recognized as a growing organization, PTTC is now working towards greater efficiency and quality in its activities, both of which are essential for delivering value to its audience and achieving results.

PTTC's current direction is driven by a business plan developed during 1998, which is continually being refined as it is implemented. This plan, which involved the Board, the Regional Lead Organizations (RLOs), and Headquarters (HQ) staff, helped PTTC to clarify its true role and to identify how its efforts add value for different sectors. As a result, the organizational mission statement was updated to better reflect PTTC's proactive commitment to industry. The new mission statement is:

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. PTTC is increasingly recognized as a critical resource for information and access to technology—especially for smaller companies.

Table 1 – Growth in PTTC's Regional Activities

Time Period	Workshops		From E&P Industry		Outreach
	# of workshops	Attendance	Attendance	%	# of E&P Industry Contacts
FY95	18	1,117			
FY96	46	3,801		83*	
FY97	62	3,176		85*	5,482
FY98	100	4,429	3,235	73	10,241
FY99 Total	128	5,948	4,935	83*	10,555
FY99 Average		46 attendees per workshop			4 contacts per day per region

* Demographic data not reported for all workshops; percentage for FY96-FY97 workshops computed from data available where reported. For FY99, percentage is estimated for the few workshops missing data.

In FY99, regional activity continued its rapid growth—from 100 workshops in FY98, which in itself was a significant increase over prior years, to 128 workshops. Total attendance at all events sponsored or cosponsored by PTTC increased to 5,948, up more than one-third from the 4,429 total in FY98. Even though PTTC's primary audience was experiencing adverse circumstances during much of 1999, average workshop attendance held constant in the mid-40s range. Demographic data indicate that over three-fourths of workshop attendees are from the exploration and production (E&P) industry. Contact levels through the resource centers remained essentially level. Moderate growth is foreseen for FY00 but, by and large, further

growth is constrained by funding. Nevertheless, PTTC aims to improve efficiency and quality at the same activity level.

Federal funds partially supporting PTTC's operation come through a multi-year grant (through April 2003) awarded by the U.S. Department of Energy (DOE) Office of Fossil Energy under the National Petroleum Technology Office and Federal Energy Technology Center. This report covers PTTC's technical progress during FY99, and illustrates PTTC's increasing impact on the domestic E&P industry.

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

Chapter 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.

Chapter 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.

The appendices contain much useful information to support the text, including the following:

Appendix A presents detailed information, by region, of FY99 regional accomplishments

Appendix B includes a roster with contact information of the 10 RLO Directors

Appendix C includes a roster of the Board of Directors, Alternates, and Committees

Appendix D is the "Guide for Professional and Ethical Conduct" adopted by the PTTC Board at its December 1998 meeting

Appendix E is the "Conflict of Interest Policy Statement" adopted by the PTTC Board at its March 1999 meeting

Appendix F is the "Statement of Identity" that resulted from strategic planning sessions

Appendix G lists "PTTC's Goal Categories," also resulting from strategic planning sessions

Appendix H describes the "Program Lines" that PTTC is in the process of implementing

II. RESULTS AT THE NATIONAL LEVEL

PTTC functions as a cohesive national organization that implements industry's directives through both its national and regional programs. The role of HQ staff includes planning and managing 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. This Technical Progress Report will focus on the key areas involving human resources, strategic planning, and oversight of the regional programs.

1. Human Resources

Responsibilities require that there are enough qualified staff members and contractors available, along with industry volunteers on the Board and regional PAGs, to accomplish the organizational mission. The Board adopted two policy statements in FY99, which apply to these PTTC representatives (included in the appendices). The "Guide for Professional and Ethical Conduct" was adopted by the Board on December 6, 1998. At the recommendation of PTTC's auditors, a "Conflict of Interest Policy Statement" was adopted by the Board on March 30, 1999

a. Headquarters Staff

The HQ staff, who continued to work as a team in FY99 to accomplish many goals, include:

--Deborah Rowell, Executive Director, who is ultimately responsible for all facets of PTTC. In October 1998, she earned the designation of Certified Association Executive (CAE) from the American Society of Association Executives; less than 12% of association senior managers in the U.S. have this credential. In November 1999, Ms. Rowell, who has been with PTTC from its beginning, announced that she plans to resign as Executive Director effective June 30, 2000. Having achieved many of her goals in establishing PTTC, she decided to make the announcement early in the process to give PTTC ample time to make an orderly leadership transition, hopefully allowing for some period of overlap with a new Executive Director. A search committee was immediately formed under the chairmanship of Bob Nance, PTTC's Immediate Past Chair.

--Jeff Lenard, Communications and Marketing Manager, made valuable contributions to PTTC in FY99, communicating a stronger image with revised logo/literature/slogan, expanding press coverage, and helping develop new products. To pursue expanded opportunities, Mr. Lenard resigned his position in November 1999, after nearly two years with PTTC. Rather than replacing him at this time, PTTC is exploring options for possibly outsourcing on a contract basis some of its publications, with remaining communications tasks redistributed among other staff.

--Kathy Chapman, Financial and Contracts Manager, who has been with PTTC from the beginning, is responsible for all contractual matters with DOE, the RLOs, and other contractors. In addition, she manages the financial and accounting systems, and has been responsible for Y2K preparations in the HQ office, which involves updating PTTC's accounting software. She also serves as office and personnel manager. Ms. Chapman worked on a full-time basis until September 1998, when she changed to part-time staff.

--Dan Lawrence serves as Webmaster/Project Assistant, which includes responsibility for maintaining the national website, and communicating with the regional webmasters. Currently starting his third year with PTTC, he also supervises the in-house computer systems, generates

graphics, and performs other computer-oriented tasks. As Project Assistant, Mr. Lawrence assists in monitoring regional deliverables and analyzing activity statistics and surveys.

--Anne Parker, Activity Coordinator/Meeting Planner, joined PTTC in January 1999. She provides administrative support for communications, marketing, appropriations tracking, meeting planning, and special projects. She has recently assumed an expanded role with production and layout of *PTTC Network News*, as well as issuing press releases. Her responsibilities with other communications services and products are evolving.

--Although not located in the Washington, DC office with the individuals listed above, Lance Cole is a key member of the HQ senior staff. Residing in Tulsa—the heart of the oil patch—Mr. Cole has served under contract as PTTC Project Manager since September 1996. He oversees RLO activities for compliance with contract reporting and deliverables, PAG direction, and national policies. He also coordinates inter-regional efforts, supports national communications efforts, serves as technical adviser, and assists in strategic planning and other projects as needed.

For some publications and projects, HQ has retained consultants on an as-needed basis for specific tasks. Being technical in nature, their efforts are mainly coordinated by Mr. Cole.

b. Board of Directors

PTTC's Board of Directors includes independent oil and gas producers, as well as representatives from national industry organizations, professional societies, and industry sectors (major E&P firms and service companies). An expected transition in Board leadership occurred in March 1999 when Leo Schrider became Chair, replacing Bob Nance; and Clark Southmayd became Vice Chair. Other Board members also changed during the year with rotating leadership in regional PAGs and the major company representative. The IOGCC representative to PTTC's Board changed as a result of a resolution passed at the December 1998 IOGCC meeting. It stated that the Chair and Vice Chair of IOGCC's Energy Resources, Research and Technology (ERRT) Committee would serve as representative and alternate to the PTTC Board.

During FY99, PTTC's Board met three times: (1) on December 5-6, 1998 in Salt Lake City, Utah, meeting jointly with the RLO Directors, (2) on March 30, 1999 in Chicago, Illinois, and (3) on July 19, 1999 in Washington, DC. In their July 1999 meeting, the Board approved adding an ex-officio, non-voting position representing the RLOs to improve communication. Charles Mankin, South Midcontinent region, was selected by the RLOs for the first one-year term.

c. Management & Budget (M&B) Committee

The M&B Committee provides guidance to the HQ staff between Board meetings. The group meets approximately monthly with the Executive Director, either in person or by conference call, often including other senior staff. Also, the M&B Committee meets jointly with the PAG chairs in conjunction with each Board meeting. (See Appendix C for current roster)

d. Producer Advisory Groups

Each region has a group of industry representatives serving as local advisors for the program. These Producer Advisory Groups (PAGs) work closely with their corresponding RLO, especially during the annual planning process, as the PAGs must approve the region's plan/budget before submitting it to HQ. At least annually, PAG rosters are reviewed to verify contact information, to determine who has been active and wants to continue serving, to check on the term expiration dates of PAG officers, and to ensure that the group is representative of the local independent producing industry. HQ works with any PAGs needing help in facilitating this process. Activities are guided by PAG Guidelines approved in FY97 by the Board.

2. Strategic Planning

Since 1995, the Board of Directors has had an annual strategic planning session to guide its long-term direction. In FY98, the Board adopted a business plan that helped PTTC clarify its mission, markets, goals, image, and its value to different segments of industry. A new slogan was adopted: "PTTC is the Independent Producer's Bridge to Solutions." The overall vision incorporated within this consensus plan is summarized in the "Statement of Identity." (See Appendix F).

The strategic planning process also specifies five categories of goals that the organization strives to attain: Awareness, Connections, Performance, Credibility, and Finances. Each of these has several vision statements that describe what success will look like (Appendix G). To help accomplish these, PTTC will launch five program lines in FY00 to streamline its products and services. The program lines selected (See Appendix H) are:

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

3. Oversight of Regional Programs

HQ has oversight responsibility for the regions, an important aspect being the annual planning/budgeting process. RLO commitment, generally far above minimum levels, led to record activity levels in FY99. Plans for FY00, which forecast modest growth, were submitted late in FY99 and formally approved during a Board meeting in November 1999. Extending the RLO contracts through April 2003 was an important accomplishment during FY99. These were originally scheduled to expire at the end of FY99.

During FY99, the RLOs met twice—jointly with the Board in December 1998 in Salt Lake City, Utah, and on their own with the HQ staff in June 1999 in Dallas, Texas. Serving as the main HQ contact with the RLOs, Mr. Cole interacts frequently with PAG Chairs about any regional concerns. He also works with RLO Directors and staff regarding implementation of the annual plans, potential technology transfer opportunities, and regional input for national communications. During FY99, he participated, either in person or via conference call, in PAG meetings in six of 10 regions. To monitor the quality of PTTC activities and discuss concerns/opportunities with RLOs, he attended 10 workshops in eight regions. Other HQ staff attend regional events as the schedules permit.

From the start, PTTC has tried to capture and report data that demonstrate its impact on the US upstream oil and gas industry. Most data are activity-oriented statistics, including the number of workshops conducted, the number of participants, resource center contacts, website usage, etc. Workshop attendance has been reported since FY95, with the percent coming from the E&P industry noted. Contact statistics, which have been reported since FY96, were improved during FY99, as HQ and RLOs refined their definitions of what constitutes a contact. Data for website usage were also improved during FY99 when HQ and most regions began using a common WebTrends™ software package to record key indicators—the # of user sessions, # of pages viewed, and the average session time. RLOs not using the common software are being encouraged to do so.

Although difficult to obtain, some anecdotal evidence has been captured of specific technology actions that resulted from PTTC efforts. By and large though, industry does not openly share these stories, particularly specific production rate, reserve, and economic performance data. It must be recognized that when technology decisions are made and actions taken, PTTC is probably one of many information sources that influenced the course of action. It can be misleading for PTTC, or others, to

take all the credit. Although valuable in illustrating the types of success stories that exist, these success anecdotes alone are too few to adequately capture PTTC's impact.

To obtain more data from a broader audience, PTTC developed three standardized questions late in 1998 and asked the RLOs to incorporate them in their workshop feedback forms. One question related directly to measuring PTTC's impact, asking respondents for a "Yes/No" answer to the question: *Have you used any new technologies based on knowledge gained through PTTC?* Those responding "Yes" are asked to describe the application/results in general terms. Data are limited as PTTC is still trying to achieve consistency among the regions in using the standardized questions. Even when the key question above was included, not all workshop attendees answered it. Yet, early responses are very encouraging—a third or more are saying "Yes." Unfortunately, few of those share any details about the technology used and its results.

At the most fundamental level, impact is measured by "willingness to continue supporting PTTC." Support comes in several forms—funding from federal, state and industry; active volunteer involvement in the Board and PAGs; and most importantly, customers (primarily the producers who attend regional workshops) keep coming back to PTTC for more services and products. Regarding funding, both state and federal sources continue their direct financial support, with many RLOs far exceeding cost-share requirements. Industry support, while strong, comes in the form of time/travel donations, not cash money to spend—which is understandable considering the current state of the industry. Volunteers are maintaining strong commitments at leadership levels of the Board and the PAGs; but it is a continuing challenge to maintain active involvement by all PAG members.

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 through: (1) technology alerts and articles with field results in *PTTC Network News*, (2) responding to inquiries received through the national office, (3) identifying industry problems and assessing needs, (4) developing informational products, such as the *Petroleum Technology Digest*, (5) capturing the highlights of regional workshops in *Solutions from the Field*, (6) implementing case study-oriented activities, such as the Emerging Technologies Energy Conference (ETEC), and (7) coordinating PTTC activities with DOE's oil and gas R&D programs and those of other organizations.

1. Newsletter Articles and Alerts

Technology information is received from multiple sources for *PTTC Network News*. About half of the material comes in response to solicitations that HQ sends quarterly to a group of regular contributors of technology information. The HQ staff screen the submissions to decide which material will be of greatest interest to independent producers. Focus is generally on information/data products describing new commercially available technologies or promising R&D advances. Significant developments within DOE's R&D program are also presented. For the regional section, insights from PTTC's local technology workshops are emphasized.

2. Answering National Inquiries

On average, the HQ office receives 3 to 5 technical inquiries per week. These are forwarded to the appropriate RLO staff when the inquiry is specific to a given region or when specialized expertise is known to exist within the regional resource centers. HQ staff responds directly to about two-thirds of the inquiries, often from small or regional vendors touting new products. 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*. Often, HQ staff makes referrals to other contacts that offer potential for further developing and/or commercializing the technology.

3. Problem Identification/Needs Assessment

In 1998, PTTC developed a technology needs survey, distributing it through *PTTC Network News*, the national website, the regional programs, and through IPAA. Survey respondents were asked to indicate their needs/interest level in five areas. The final results were released to DOE and the R&D community in an August 1999 report titled *Technological Priorities of Independent Oil and Gas Operators* (which can be downloaded from the national website at www.pttc.org)

PTTC also worked cooperatively in two other problem identification efforts. Early in FY99, Concurrent Technologies Corporation (CTC), a non-profit organization, asked for PTTC's assistance in bringing technologies developed by federal labs in defense programs into the upstream oil and gas industry. PTTC solicited industry volunteers, ultimately identifying 22 individuals at independent E&P companies who agreed to participate in extended phone interviews with CTC to discuss their technology needs. After conducting the interviews, CTC looked for potential technology matches in the federal lab system, and reported results to PTTC in mid-1999. PTTC also helped alert industry to a late spring survey by Westport Technology Center Int. that was aimed at finding technical problems that could be addressed in applied short-term R&D efforts within a year.

4. Petroleum Technology Digest

PTTC and Gulf Publishing teamed up in 1999 to jointly release a new industry publication, *Petroleum Technology Digest (PTD)*. For this effort, PTTC works with vendors and producers to develop the case studies, routing them through an informal PTTC screening committee. Gulf Publishing has responsibility for advertising sales, layout and printing. As a prelude to *PTD*, three case studies developed by PTTC were published in the June 1999 issue of *World Oil*. The inaugural *PTD*, containing nine case studies, was mailed as a supplement with *World Oil's* September 1999 issue to their independent producer subscribers in North America, and PTTC distributed additional copies through its channels. Overall, more than 10,000 individuals received it and had an opportunity to learn from the case studies—a broader and potentially different audience than PTTC has reached through prior activities. Industry response to the *PTD* has been very favorable and plans are in place to publish two issues during 2000—in May and September.

5. Solutions From the Field

From inception, PTTC has tried to find the most effective method of capturing technology insights from its regional workshops so that they can be accessed longer-term. Now that PTTC conducts more than 100 workshops per year, it was necessary to update the format of its 1997 report, *Best of PTTC Workshops*, so that more technical content and insights could be published. In August 1999, PTTC published *Solutions From the Field* as a compendium of technical ideas, solutions, and contact information from 14 regional workshops. Since its publication, at least two new summaries have been added to the national website each month. The result is an extensive archive of technology insights available electronically and searchable by topic, just as with technology information presented in *PTTC Network News*. PTTC anticipates periodically distributing an updated version of *Solutions from the Field* containing workshop summaries that have been added online since the last publication.

6. Emerging Technologies Energy Conference (ETEC)

For the first few years of PTTC's program, all technology workshops and events took place at the regional level through the RLOs. In 1997, PTTC held its first national conference, working with the Independent Petroleum Association of America (IPAA) and Cambridge Energy Research Associates. The Emerging Technologies Energy Conference (ETEC) was held on November 17, 1997, in Houston, with several hundred people attending. Feedback from producers indicated that they liked the format where both producers and vendors/service companies were involved in presenting the case studies. The next year, PTTC coordinated with IPAA to host ETEC '98 in New

Orleans. Working with Mr. Cole on the HQ staff, PTTC formed an ETEC subcommittee that selected four case studies based on the individual experiences of subcommittee members and insights from PTTC's technology needs survey. Jed DiPaolo with Halliburton Energy Services gave a presentation on technology trends. Attendance was lower—not surprising, considering industry conditions at the time. However, those attending still responded quite favorably. Recognizing continued adverse conditions during 1999 and considering IPAA concerns about ETEC making its annual meeting spread out over too many days, PTTC and IPAA decided not to have ETEC during 1999 or 2000.

7. Coordinating with DOE and Other Groups

Where appropriate, PTTC incorporates R&D findings from DOE projects into regional workshops. Several cooperative efforts were coordinated during FY99:

In late 1998, PTTC's Rocky Mountain, Texas and Southwest regions hosted workshops (Salt Lake City, UT; Socorro, NM; and Midland, TX) featuring results from several projects in DOE's fractured reservoir program.

In June 1999, the Appalachian and Texas regions hosted workshops (Zanesville, OH; Midland, TX) featuring microbial technology demonstrated in Hughes Eastern's Class 1 project in Alabama.

In July 1999, the Central Gulf and West Coast regions hosted workshops (Bakersfield and Long Beach, CA; Lafayette, LA) featuring DOE's coiled tubing operations and safety manual.

A series of August workshops (Pittsburgh, PA; Pontiac, IL; Houston, TX) featuring advanced stimulation technologies for gas storage developed in a DOE Federal Energy Technology Center R&D program was planned, but ultimately canceled by Advanced Resources International, the DOE contractor, due to low registration.

PTTC actively coordinates with the national labs through DOE's Natural Gas and Oil Technology Partnership (NGOTP). In late FY98, PTTC helped recruit independent producers for two of the industry review panels. In addition, Connie Hudson (AAPG's representative on the Board) and Mr. Cole attended the NGOTP review meetings held in Houston and Tulsa. They were specifically looking for projects perceived to be of interest to independents that are at a stage appropriate for technology transfer. Special effort is also made to incorporate an appropriate article about a NGOTP project in each issue of *PTTC Network News*.

To further improve communication with the entire system of 700+ federal laboratories, former PTTC Chair Chris Hall agreed to serve as a liaison between the federal labs and the PTTC Board. He was added as an industry adviser to the Federal Lab Consortium and attended a strategic planning meeting in August. Mr. Hall also volunteered for (and was accepted as) a reviewer for the NGOTP oil and gas recovery technology panel. He attended the November 1999 review meeting in Houston, along with Mr. Cole who also participated in a strategic meeting at RMOTC with staff from the national labs discussing the critical role of field testing in the technology acceptance and commercialization process.

PTTC, nationally and through its regions, played an active role in alerting independents to funding opportunities within two DOE programs—the "Technology Development with Independents" program sponsored by NPTO and the "Stripper Gas Well" program sponsored by FETC. Jim Barnes, NPTO project manager, was provided an opportunity to share program information in several regions, including announcements in PTTC newsletters and websites. PTTC is aware that several proposals, some of which won awards, occurred specifically because of its active role in alerting independents. As results from these key programs for independents become

available, PTTC plans on being actively involved in transferring them to industry. Where appropriate, PTTC also alerted producers to opportunities within the “Class Program Revisited.”

In a separate effort, PTTC notified producers about DOE’s project through the National Association of State Energy Officials targeting technologies for reducing electrical power costs. Mr. Hall, as West Coast PAG Chair, was involved in promoting early workshops in California and also participated in a workshop in Utah, co-sponsored by the Rocky Mountain Region.

HQ staff also advised DOE as they developed plans for their Oil and Gas Conference in Dallas in June 1999. Ms. Rowell worked with the coordinating committee, and Mr. Cole participated in the program committee to select projects that should be included in the agenda. Mr. Lenard and other HQ staff assisted DOE with promoting the event. Sandra Mark from the Rocky Mountain Region chaired a pre-conference workshop on “E&P software,” taking advantage of the opportunity to acquaint attendees about PTTC’s *E&P Software Sampler*. PTTC Chair Leo Schrider spoke in the plenary session of the Conference.

Although PTTC coordinates with various professional societies, this is especially true of the three represented on its Board — the American Association of Petroleum Geologists (AAPG), the Society of Exploration Geophysicists (SEG), and the Society of Petroleum Engineers (SPE). PTTC has a formal letter of agreement with AAPG for cooperative efforts. In the Texas Region, PTTC co-sponsors Internet training workshops conducted by AAPG, which also provides significant financial support for the software training center in Golden, Colorado. Responding to an AAPG request, HQ staff coordinated a 1999 coal bed methane article for *Explorer* magazine.

PTTC supports both SPE and DOE in their “Improved Oil Recovery Symposium” held on alternating years in Tulsa, Oklahoma. Late in FY99, Lance Cole participated in the technical program committee helping select papers for the April 2000 conference. The North and South Midcontinent regions are also working with the conference committee to organize a special “Independents Day.” For a special one-day pass at reduced fees, independents will be able to attend a PTTC case study session, in addition to that day’s technical sessions, and the beer-n-bratwurst reception in the exhibit hall. The specific goal is to draw local independents that do not normally attend the conference. PTTC remains open to other cooperative opportunities with the SPE but, following their wish, is pursuing them mainly at the regional rather than national level.

HQ staff coordinates with other national organizations, leveraging efforts and looking for information of interest to independents. Specific actions during FY99 include:

American Geological Institute (AGI)—PTTC briefly considered, before declining, a potential opportunity to operate a proposed national core lab facility in Denver, Colorado.

Drilling Engineering Association (DEA)— PTTC strives to disseminate findings about industry needs from DEA’s special forums through *PTTC Network News*. Mr. Cole often attends DEA’s quarterly review meetings on the progress of its R&D projects.

Interstate Oil and Gas Compact Commission (IOGCC)— Through *PTTC Network News*, PTTC helps inform the E&P industry about new IOGCC reports and findings.

New York State Energy Research and Development Authority (NYSERDA)—PTTC promotes its oil and gas R&D results and new solicitations through alerts in the newsletter.

Gas Research Institute (GRI)—PTTC summarizes new products or research through alerts the *PTTC Network News*. GRI hosted PTTC's March 1999 Board meeting in Chicago.

C. Implementing a Comprehensive Communications Program

As an organization whose mission centers on the transfer of information, communications is critically important in all aspects of the program. During FY99, using the recent business plan as a roadmap, PTTC updated logos, slogans, brochures, business cards, stationery, publications order form, and some display graphics to be consistent with PTTC's desired image. HQ also had an exhibit at several national events, including the North American Prospect Expo in Houston (January 1999), the SPE annual conference in Houston (October 1999) and the AAPG annual conference in San Antonio (April 1999).

Other components of PTTC's communications program include: (1) newsletter, (2) press releases, (3) articles in trade publications, and (4) website.

1. Newsletter

PTTC's 16-page national newsletter, *PTTC Network News*, has been published quarterly since 1995. It incorporates producer interviews, R&D and technology alerts, field results, and information from DOE's oil and natural gas programs as well as other technology providers. It also has highlights of PTTC's programs and various special features. Newsletter distribution has grown to over 7,000 individuals—with nearly three-fourths of those from the E&P sector (specifically, 54% are independent producers, 10% are service and supply companies, and 9% in technical consulting).

2. Press Releases

HQ develops national press releases to convey information of a national or inter-regional scope. There were 12 such press releases during FY99, as indicated below.

- Case Studies to Highlight Producer/Vendor "Success Stories" (10/15/98)
- Handbooks Updated on CD-ROM for Louisiana, Mississippi Oil and Gas Producers (10/27/98)
- New CD-ROM Targets Independent Producers' Software Needs (11/12/98)
- Technology is Key – But Not the Only Driver – in Petroleum Production (11/13/98)
- "Industry Crisis Action Plan" Launched for U.S. Independent Petroleum Producers (12/7/98)
- World Oil* Magazine and PTTC Form Alliance: Focus on Technologies for Independent Producers (1/27/99)
- Proven Strategies from Independent Producers the Focus of Upcoming Seminar (2/2/99)
- Petroleum Technology Transfer Council Elects New Board Members (4/5/99)
- Coiled Tubing Workshops Announced for California, Louisiana (5/12/99)
- Solutions From the Field Released by Petroleum Technology Transfer Council (7/27/99)
- Survey Results Reveal Independents' Technological Priorities (8/23/99)
- New Publication Highlights Upstream Petroleum E&P Case Studies (9/14/99)

In cooperation with the RLOs, HQ staff also issues regional press releases alerting local media to upcoming regional events that are sponsored or cosponsored by PTTC. There were 44 regional releases during FY99, which are archived on the national website.

3. Articles in Trade Publications

The HQ staff writes a quarterly column that is published in *World Oil* magazine, and develops various articles for the national trade press (with technical input from the regions). Each year, PTTC's chair is asked to publish an article for the special issue of *American Oil and Gas Reporter* that features association presidents. RLO Directors and their staff are continually encouraged to submit technology articles to trade press and industry publications, and several were published during FY98. However, this effort has received less emphasis lately, with increased workshop activity levels during FY99. When requested, HQ works with RLO staff in developing technical articles, such as with a 1999 coal bed methane article for AAPG.

4. Website

Recognizing that the Internet was a valuable tool for disseminating data and information, PTTC was one of the first petroleum organizations with a comprehensive website. Launched in June 1995, the national website (www.pttc.org) is linked with the 10 regional websites. It contains organizational information, a calendar of PTTC events, technical summaries, publications, press releases, surveys, selected links with descriptions of producer associations, and more. Importantly, the national website serves as a gateway to the regional websites, which contain data, case studies, and other technical information. It also provides a venue for special announcements, promotion of new products, and posting surveys.

During 1999, PTTC made several improvements to its national website – adding a site map, a publications order form, and installing “gateway” pages to make it easier for visitors to access the regional resources. When users are going to regional websites from PTTC's homepage, they are shown concise, consistent information about each region before actually exiting the national website.

Prior to FY99, PTTC used “hits” as its primary activity measure—and usage at the national website had grown steadily to the range of 30,000 hits per month. During 1999, HQ and most PTTC regions began using WebTrends™ software to monitor usage. In addition, a set of common indicators was agreed upon as the key criteria for measuring website usage. For historical comparison though, total hits are in the 60,000 per month range. Trends for the new parameters are:

- Number of user sessions per month—growing to about 6,000 sessions by end of FY99
- No. of page views—growing to 12,000 or higher by end of FY99 (2+ views per session)
- Average user session length—holding stable in the 10-11 minute range

III. RESULTS AT THE REGIONAL LEVEL

Although nationally organized, PTTC's ten regions are the primary delivery mechanism for technology transfer to industry. It is in the regions where PTTC connects most directly with independents—through workshops, resource centers, websites, newsletters, personal contacts, and other information sources. Primary statistics illustrating the volume, and inferred impact, of PTTC activities are summarized in Table 2. Detail for individual regions is provided in Appendix A.

PTTC Region	Workshops			Contacts		Newsletter Function (distribution)	Status (considering statistics alone)
	#	Attend.	% Change in Attend. Vs. FY98	#	% Change Vs. FY98		
Appalachian	11	372	8	345	109	Infrequent Columns	Holding steady
Central Gulf	8	319	6	650	53	Regular Columns	Holding steady
Eastern Gulf	11	322	(26)	432	12	Newsletter (600)	Holding steady
Midwest	5	190	0	774	229	Newsletter (2700)	Holding steady
N. Midcontinent	10	776	152	2,764	23	Newsletter (4700)	Major increase in presence/impact
Rocky Mountain	31	1,524	502	1,212	16	Newsletter (1200)	Major increase in presence/impact
S. Midcontinent	24	1,008	28	1,468	1	Newsletter (6400)	Steady increase in presence/impact
Southwest	6	522	39	566	(8)	Newsletter (3400)	Steady increase in presence/impact
Texas	5	163	(65)	954	(14)	Infrequent Columns	Overall setback, but promising impact of Mentor
West Coast	17	752	(22)	1,390	(48)	Inactive this year	Holding steady, or modest decrease in presence/impact
Total All Regions	128	5,948	34	10,555	3	Steady increase in presence/impact despite extremely difficult year for primary audience—independents	

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 monthly during FY99)
- *Proble: identification*— feedback from workshop attendees, contacts, and inquiries
- *Resource centers*—mostly virtual, responding to inquiries and developing products
- *Internet*—calendar and event information; repository for case studies, technical information, and data
- *Newsletter*—regional newsletter or columns in local producer association newsletters

A. Technology Workshops

PTTC sponsored or cosponsored 128 regional workshops during FY99. This is a 28% increase over the 100 events held in FY98, which itself was a 60% increase from FY97. Overall attendance increased more than one-third from the prior year. Despite an extremely difficult year for independent producers, attendance remained steady, averaging 46 individuals per workshop, with 83% from the E&P industry.

In December 1998, PTTC's Board implemented an Industry Crisis Action Plan, asking all regions to look at their activities and, if appropriate, develop workshops addressing survival issues. Fifteen survival-oriented workshops were held (See Table 3) that reached about 800 individuals. Insights from these were shared with a broader audience through *PTTC Network News* and a column in *World Oil* (June 1999).

Table 3 – 1999 Survival-Oriented Activities

Region	Activity	Location	Date	Attend.
West Coast	<i>Managing Oilfield Operations Under Adverse Economics</i>	Bakersfield, CA	1/21/99	63
Appalachian	<i>PTTC speaker at IOGA meeting</i>	Knoxville, TN	1/21/99	NA
Midwest	<i>Low Oil Prices: Pricing, Legal Issues, Electrical Cost Reduction, Exchange Ideas</i>	Grayville, IL	1/22/99	42
West Coast	<i>Managing Oilfield Operations Under Adverse Economics</i>	Long Beach, CA	1/22/99	65
Midwest	<i>Low Oil Prices: Pricing, Legal Issues, Electrical Cost Reduction, Exchange Ideas</i>	Mt. Vernon, IL	1/29/99	33
Texas	<i>Open discussion group after a TIPRO Tue. Luncheons</i>	Houston, TX	2/99 to 5/99	NA
Rocky Mountain	<i>Coal Bed Methane Opportunities (SPE/MT Geol. Soc.)</i>	Billings, MT	2/16-17/99	182
North Midcontinent	<i>Best Practices for Production Shut-Down</i>	Wichita, KS	2/23/99	99
North Midcontinent	<i>Best Practices for Production Shut-Down</i>	Iola, KS	2/25/99	72
North Midcontinent	<i>Best Practices for Production Shut-Down</i>	Hays, KS	3/2/99	79
National seminar, coop. w SIPES)	<i>How to Build a Company as an Independent and Survive Difficult Times</i>	Wichita, KS	3/10/99	NA
Rocky Mountain	<i>Best Practices for Production Shut-Down (w IPAMS)</i>	Denver, CO	3/12/99	55
Appalachian	<i>Optimizing Prod. & Operating Efficiency of Existing Wells (w/ OH Geol. Survey, and OH Oil&Gas Assoc.)</i>	Columbus, OH,	3/23/99	50
Central Gulf	<i>Power Cost Reduction Methods in O&G Field Operations</i>	Lafayette, LA	3/24/99	24
Rocky Mountain	<i>Minimizing Energy Costs in the O&G Production Industry (support DOE/NASEO initiative)</i>	Vernal, UT	5/26/99	31

FY00 annual plans project activity levels about the same as FY99 levels, approximately the maximum feasible with existing funding levels. Major increases in activity in some regions are due to new cooperative efforts with other groups. Where appropriate, the regions cosponsor technology workshops with DOE or their contractors, to transfer results of federally-funded R&D. Examples during FY99 include: fractured reservoir workshops in Rocky Mountain, Southwest, and Texas regions; microbial workshops in Appalachian and Texas regions; coiled tubing workshops in Central Gulf and West Coast; and, although ultimately canceled, advanced stimulation workshops for gas storage operations in Appalachian, Midwest and Texas regions.

New delivery mechanisms have been explored. The Rocky Mountain, North Midcontinent and Southwest regions are exploring on-line training courses (Internet resources, PFEFFER well logging, reservoir simulation with DOE Boast 3). The West Coast Region has experimented with webcasting (real-time audio/video broadcast over the Internet) and video archiving on its website. Although offering exciting possibilities, webcasting is still costly—widespread use probably awaits technology advances.

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. Some regions, such as the South Midcontinent, have surveyed their audience using the regional newsletter. The West Coast Trouble Shooters program provides a unique opportunity to learn what industry's needs are. In Texas, the Permian Basin Mentor effort provides specific information regarding the technical interests of smaller producers. Most regions maintain close ties with operator associations, whose members are PTTC's primary audience. To help guide their efforts, all regions were given the results of PTTC's needs survey – both nationally and for their region.

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.

1. Access to Information /Data

All resource centers provide access to basic information, data resources and libraries. In addition, information resources are available through the RLOs' parent organizations.

2. Response to Inquiries

Although varying widely among regions, industry contacts average about four per working day per resource center. Contact level in the different regions reflects both the geographical concentration of industry and awareness of the PTTC regional program among local independents. By far the largest percentage of contacts is for calendar/event information, followed by basic oil and gas data/statistics. A small percentage of contacts, in the range of 10 to 20 percent, are true technical inquiries, requiring professional expertise to respond. The time required to adequately provide a response or referral varies widely—from an hour to several days. In some instances, staff members proactively contact industry with some regions noting up to 20% of their contacts as PTTC-initiated.

3. Upstream Software Demo/Training

All resource centers have E&P software available for demo/training to those who are interested. Overall, industry's usage of this resource remains low—unless the regions conduct specific training courses. Informal demo sessions, such as the "Friday Free-for-Alls" hosted by the South Midcontinent Region at its resource center, have had some success. Combined, the regions conducted 30 software training courses in FY99, drawing nearly 400 people, plus another seven Internet training workshops, with 140 participants. By far, the Rocky Mountain Region with its Software Training Center, supported

jointly by AAPG, the Colorado School of Mines, and the Rocky Mountain Region, is the most active, holding 20 software/Internet courses during FY99. AAPG provided additional support for multi-day training courses. The Appalachian and Eastern Gulf regions averaged quarterly workshops, but most regions conduct software training workshops only intermittently. In most regions, industry is most interested in training on low-cost software, such as that available from DOE.

To stimulate interest on a larger scale, PTTC developed a *Petroleum E&P Software Sampler*, using the contract services of Sandra Mark from the Rocky Mountain Region. This CD-ROM product, issued in November 1998, contains overview information on 50 PC-based software programs that have been donated to PTTC's regional resource centers. Information is presented in a searchable format, according to each program's key features, applications, capabilities, and price ranges. At first, PTTC sold the CD-ROM, for a nominal fee. Currently, the product is provided free of charge. The highest interest has been from software vendors, inquiring how to get their products included on the next sampler, if it is updated. PTTC has surveyed those who bought the sampler but, since response was limited, a decision has not yet been made about whether to update the product.

4. Information Products

In selected instances, RLOs develop information products, primarily to meet an industry need but also to generate funds. From a revenue standpoint, the Central Gulf Region with its Louisiana Desktop Well Reference (LDWR) and Environmental Handbook CD-ROMs has been the most successful, reporting sales over \$12,000 during FY99. The LDWR provides lease information, including historical production data, for Louisiana in a GIS environment. It has been well received by industry, fostering similar efforts by other organizations in two states. The Midwest Region and the Illinois State Geological Survey are developing base map products for the Illinois Basin, both standard and customized. Longer-term, the core and waterflood database that the Midwest Region has been compiling may represent a revenue-generating product.

5. Special Purpose Databases

Industry continues to indicate that data access is a primary need, but PTTC does not have sufficient funds to develop large database efforts — rather it tries to be a vehicle for improving access to data already available. However, experience indicates that independent producers in some regions have data needs that are not being met by other private or public sources. For this reason, PTTC evaluates database projects on a case-by-case basis, considering funding realities and sensitivities to already existing databases.

In the North Midcontinent, the Kansas Geological Survey, with some support from PTTC, is continually expanding the data available through its Digital Petroleum Atlas. In New Mexico, the Southwest Region works to make production data available electronically through the ONGARD system, plus works to make geological data from the New Mexico Bureau of Mines and Mineral Resources available in a GIS environment. Staff in the Eastern Gulf's satellite in Jackson are devoting their efforts to making Mississippi oil and gas data available electronically. The Michigan outreach program is coordinating a log and horizontal well database. Central Gulf funds have, in the past, partially supported an effort to organize and catalog well logs at LSU's Basin Research Institute. The Midwest Region's core and waterflood database was mentioned in the section above.

6. Other Outreach Efforts

RLO staff also implement special outreach programs from the resource centers. In the West Coast, the Trouble Shooters program relies on volunteers to interact with industry addressing critical regional needs. The COMET program at USC, a student education program partially supported by the West Coast Region, encourages student internships with independents. North Midcontinent staff is working closely with the Tertiary Oil Recovery Project (TORP) at the University of Kansas and Shell

CO₂, supporting a Kansas CO₂ Initiative. The Central Gulf Region continues to provide modest support for LSU's Downhole Water Sink Consortium furthering this technology's use and acceptance within industry, particularly internationally.

South Midcontinent staff work closely with Oklahoma's Marginal Well Commission supporting their Trade Fairs, and with OU Geo Information Systems helping them promote access to the NRIS database via the Internet. Texas implemented a Mentor program in the Permian Basin during the spring of 1999, which relies on networking and personal contact. In New Mexico, the Southwest regional staff were instrumental in helping operators learn how to file production data electronically, an effort recognized by New Mexico's Oil Conservation Division.

All RLO Directors are active in professional societies appropriate for their discipline. Most RLOs have PTTC exhibits at regional meetings of operator associations, and at national events, such as the AAPG and SPE annual conferences. Often, the exhibits are joint booths with their parent organization.

D. Websites

In FY99, PTTC asked its regions to use the same WebTrends™ software package to improve consistency in how traffic is reported. In addition to monitoring key usage statistics (number of user sessions, number of page views, and session length), the software tracks access to individual pages and flow through a website. It must be noted that a couple of regions have not been able to use the software on their servers, but are working to resolve the situation. Comparison of statistics between regions is discouraged; rather one should focus on growth trends within a region. Even so, higher website traffic has been experienced in three regions—Texas, North Midcontinent, and Southwest.

Texas. At year-end, traffic was about 50,000 user sessions/month. Extensive revisions to strengthen technology-related content and improve consistency with other PTTC regional websites are ongoing.
North Midcontinent. Because of the continued strong emphasis at KGS on electronic/GIS data, the regional website delivers an abundance of oil and gas data – drawing 6,000 to 8,000 users per month.
Southwest. Since the regional website and the original GO-TECH site are integrally related, current activity statistics (around 5,000 users per month) include usage of both sites. The system of websites underwent extensive revision during FY99, mainly to provide faster access.

Brief comments about the remaining websites follow, noting usage and/or content additions:

Appalachian. Usage is slowly increasing, but remains below 1000 user sessions/month. Content focuses on oil and gas data, case studies and planned events (by PTTC and others). Staff is exploring options for new content that should draw users more frequently.

Central Gulf. Usage steadily increased to about 1,800 user sessions at year-end. No major revisions in content occurred during the year. High interest content includes a "Louisiana Oil and Gas Information" section, oil and gas prices and drilling data.

Eastern Gulf. Usage appears to have stabilized in the 1,200 to 1,400 user sessions/month range. Users are staying longer—average session length increased from eight to near 30 minutes per session at year-end. Some graphics-intensive material on the site may be influencing average session length.

Midwest. Usage has steadily increased to the 2,100 to 2,300 user sessions/month range (for the main site in Illinois). Traffic to associated websites in Michigan, Kentucky and Indiana is not reflected in the statistics. Modest support to the Indiana and Kentucky websites ended during FY99.

Rocky Mountain. Usage quadrupled during FY99—reaching a range of 2,600 to 3,000 user sessions per month and average session length increased about 50%. Early efforts focused on adding case studies and on-line Internet training. Effort now focuses on keeping the site current—no small feat with the region's very active workshop and software training schedule.

South Midcontinent. Usage is reported at 2,000 to 3,000 user sessions/month, but there may be some inconsistency with other regions since the WebTrends™ software cannot be used on the webserver at OU. Regional interest in the Internet may be increasing now that NRIS data are available online.

West Coast. Reported usage remains below 1,000 user sessions per month, but there may be inconsistencies since the WebTrends™ software package is not used at this time. Usage increases were noted with the webcasting and video archiving effort initiated during FY99.

E. Newsletters

Recognizing that a portion of its audience still relies on printed material instead of (and in addition to) the Internet, PTTC considers a newsletter to be a core technology transfer function. Regions may fulfill the function either through a regional newsletter or by regularly publishing columns/guest articles in local producer association newsletters. Six regions publish their own PTTC newsletters, most quarterly and some semi-annually, with length ranging from two to six pages. Distribution totals about 19,000 people, ranging from 600 in the Eastern Gulf Region to a high of 6,400 in the South Midcontinent Region. There is some overlap in regional mailing lists, but not enough to be an issue at this time. Broad distribution provides maximum exposure, but increased production/ mailing costs can challenge regional budgets. Most newsletters are efforts that the RLOs began as part of the PTTC program, but some are building on prior newsletters within the RLO parent organizations (North Midcontinent and Southwest). Distribution for the Rocky Mountain newsletter, which is the most recently launched, increased rapidly during the first year—from 350 to about 1,200 by year-end.

Three regions rely on columns or guest articles—Appalachian, Central Gulf and Texas—with the Central Gulf Region being the most successful with its regular columns in the LIOGA newsletter. Most regions also post their newsletters on their websites, and some, like the Southwest Region, specifically publish additional on-line newsletters. Citing cost concerns, during FY99, the West Coast Region distributed only one issue of its newsletter which, up until that point, had been released quarterly. Texas had planned to launch a quarterly newsletter, but has not been able to get it started, and does not expect to do so during FY00 either. In both regions, the RLOs and PAGs are evaluating newsletter options.

F. Success at the Regional Level

Activity-oriented statistics presented in Table 2 confirm that PTTC is reaching more people than ever. Compared to the prior year, there has been 28% growth in the number of workshops and a 34% increase in the number of workshop attendees. Beyond these basic statistics, which alone are strong evidence that PTTC is making a difference, other data reliably indicate PTTC's impact.

Repeat attendees. Although firm numbers are not yet available, most RLO Directors know that there are many individuals who continue coming to PTTC workshops for the second or third time, or more.

Feedback regarding technology application. PTTC's regions began incorporating three standardized questions in their workshop feedback forms during FY99. One key question is: Have you used any new technologies based on knowledge gained through PTTC? In FY99, the regions received evaluation forms from about 20% of the nearly 6,000 attendees at events sponsored or cosponsored by PTTC. For those who did answer the question—37% said "Yes," indicating that over a third are taking action. Granted, those who complete workshop feedback forms and answer questions like this are probably more proactive than the average operator, but if response in the broader population is only half that of the proactive group, nearly one in five individuals are still taking action.

G. Regional Success Anecdotes

Although hard to capture, operators occasionally share examples or anecdotes of how they took action based on information obtained through PTTC, and the results. Some of those are summarized below:

Appalachian—The industry partner in a secondary gas recovery workshop (11/19/98) reported several inquiries for more information and an attempt was made to create an industry consortium to co-fund additional research. A speaker in the workshop on sequence stratigraphic analysis (9/10/98) noted similar inquiries. Event evaluation forms included the key question: “Have you used any new technologies based on knowledge gained through PTTC?” Of those who responded, 42% said “Yes.”

Central Gulf—During FY99, about 70 copies of the LDWR were sold, and nearly 20 copies of the Environmental Handbooks. The LDWR in particular has been well received by industry, and inquiries have been received from organizations in other states about the approach used to develop the product. Following a workshop on coal bed methane, two independent operators signed confidentiality agreements with LSU, which allowed all parties to learn more about coal bed methane potential in Louisiana. Downhole Water Sink technology continues to spread through a combination of published material and meetings with operators individually or in small groups.

Eastern Gulf—Two R&D proposals to DOE can be tied to specific workshops and effective follow-up by regional staff. As a result of the microbial workshop in November 1998, the University of Alabama and others won an award within DOE’s “Class Program Revisited” program to test new microbial and other technologies in the Womack Hill Field. In a similar vein, the Basin MOD^R software workshop in December 1998 led to a proposal under DOE’s “Technology Development with Independents” program from Cedarhill Company to apply lateral completion technology in the Gilberton Field. Just two days after the workshop on the Mississippi Interior Salt Basin (MISB), a seismic consultant in Houston who did not attend the workshop, commented that clients were already talking about the findings of the MISB study.

Midwest—Six to seven months after the “Wireline Logging Applications” workshop, Bill Harrison at Michigan Tech University contacted attendees (61). One third of those who responded indicated that they were able to put into practice the information/concepts presented in the workshop—a level consistent with responses indicated on workshop feedback forms.

North Midcontinent—Success is inferred by the region’s ability to draw record attendance (for Kansas) in an extremely adverse industry climate. It is notable that attendees often come from several states. In addition to producers, vendors/service companies are receiving value from regional activities, as demonstrated by their willingness to pay a fee (admittedly nominal) to exhibit at workshops relevant to their technology area.

Rocky Mountain—Success is inferred by the fact that other organizations are seeking out PTTC as a partner because of the regional track record as an effective co-sponsor. Continued financial support from AAPG demonstrates success of the software training center. And the newsletter initiated during FY99 has generated several very favorable comments from regional producers. The workshop evaluation forms included the key question: “Have you used any new technologies based on knowledge gained through PTTC?” Of those who responded, 38% indicated “Yes.”

South Midcontinent—Broader support of the Oklahoma Marginal Well Commission operations-oriented workshops is enabling the region to reach smaller operators, at locations convenient for them. The recent agreement with the Tulsa Geological Society to bring play-oriented (and possibly other) workshops to Tulsa confirms the value that geological groups are assigning to regional workshops. Event evaluation forms included the key question: “Have you used any new technologies based on knowledge gained through PTTC?” Although data are somewhat limited, responses are in the same range as the overall trend—35 to 40%.

Southwest—RLO Staff Bob Emery received an award from New Mexico's Oil Conservation Division (OCD) for his key role in helping producers learn how to file electronically. By September 1999, OCD reported that 90% of gas production was filed electronically and 83% of oil production. This makes data available more quickly to the public, a key benefit to industry. As another success example, an independent who won an award under DOE's "Technology Development with Independents" program cited the region's role in developing the ONGARD production data access system, which was partially responsible for their winning the award. In another, a producer who attended the "Fractured Reservoir" workshop noted that his company is now considering buying gas wells because of information provided about the Lewis Shale. Also, an operator from California, who made the effort to travel to Roswell, NM for the Morrow gas workshop, found it to be beneficial.

Texas—The main success story is the very positive industry perceptions of the Permian Basin mentor program. Within six months, Bob Kiker implemented a mini-workshop program (half-day events) addressing key needs identified through networking. Website content focusing on Permian Basin needs has also been established as part of the Texas PTTC website. With encouragement from the PAG, the region is exploring how to leverage the program statewide to a limited extent. Also, PTTC is exploring how the Mentor program could be established in other regions, funding permitting.

West Coast—Of those workshop attendees who responded to the question "Have you used any new technologies based on knowledge gained through PTTC?", 43% indicated "Yes." There are other indications of people taking action. At the Trouble Shooters forum, DOE shared information about its solicitation, "Technology Development with Independents." The West Coast RLO, like PTTC's other regions, alerted producers to the opportunity, helped them get paperwork/forms and encouraged them to follow through with submitting a proposal. Many independents are known to have submitted proposals, and several won awards. As results from these projects become available, the region will assist in transferring the results/lessons learned to the California industry.

H. Planning and Managing Each Regional Program

PAG meetings are the primary mechanism for RLOs to obtain industry input. Time and travel requirements for "in person" PAG meetings challenge most regions, but most are successfully holding meetings via conference calls, or in one instance, even a videoconference meeting. They are typically held three times per year, with one meeting during the August time frame for discussion/approval of the region's annual plan/budget. This process is a key aspect of regional management that provides RLOs with the opportunity to objectively look at their program and consider other regions' experiences and national guidelines. The PAGs provide guidance on strategic redirections, if needed, to better serve industry's needs, and they approve the general topics for most of the workshops planned during the coming year. Challenges experienced during this planning process typically relate to strategic guidance versus management issues and how the region can be even more effective in reaching its audience.

PTTC regions perform a broad variety of services with limited funds, and human resource constraints. Staffing approaches vary by region. In some cases, RLO Directors involve only a few people, but requiring most of their time. In other cases, RLO Directors involve a broad range of people in PTTC activities, but for only a small portion of their time. Experience indicates that both approaches can be effective. Regional responsibilities include having to submit to HQ on a timely basis the required reports, invoices, workshop notebooks, and other information and deliverables. One of the most difficult aspects of managing PTTC's regional programs has been keeping activities going without interruption despite persistent delays in DOE funding. To keep the programs operating, RLOs have to maintain sufficient financial reserves and cost-share. The resolution of cash flow and related issues is truly an ongoing cooperative effort between the RLOs and Ms. Chapman.

IV. CONCLUSION

PTTC effectively combines federal, state, and industry funding to achieve important goals for all of these sectors. This integrated funding base, combined with active guidance from industry volunteers and dedicated staff at the national and regional levels, is effective. Workshop activity and website traffic continue to grow, and resource center contact levels are being sustained at high levels. Anecdotal success stories of specific technology applications exist, a significant percentage of producers respond "Yes" when asked if they are applying technologies, and satisfied customers continue returning to the workshops and other functions. PTTC is connecting with more people and making a positive difference in the U.S. upstream oil and gas industry.

Evidence indicates that PTTC is expanding industry awareness and technology usage through:

Technology workshops in all oil and natural gas producing regions. PTTC held 128 workshops in FY99, a 28% increase over FY98 activity levels. Attendance increased to 5,948, a 34% increase over FY98 levels. About three-fourths of attendees continue to be from the E&P industry. Despite adverse industry conditions, average attendance remained in the mid-40s. Technology insights are now being captured in workshop summaries, presented as *Solutions From the Field*. Topics for future workshops are guided by industry input, including that from a PTTC survey reported as *Technological Priorities of Independent Oil and Gas Producers* during 1999.

Regional resource centers. An average of four operators per day per region contact PTTC. Most inquiries are for calendar/event information, oil and gas data, and technical assistance and referrals. Other functions of the resource centers include E&P software demonstration and training, special outreach programs, revenue-generating products, and special purpose databases.

Eleven Internet websites (national plus 10 regional sites). PTTC's website system is a key delivery system for oil and gas data and calendar/technical information. Statistics confirm that website traffic is still growing as further technical information and O&G data are added.

- **Newsletters.** Circulation for the 16-page, quarterly national newsletter, *PTTC Network News*, has grown to above 7,000 with nearly three-fourths from the E&P sector (specifically 54% are independent producers, 10% service and supply companies, and 9% are technical consultants). Total distribution for regional newsletters tailored to specific regional audiences has grown to about 19,000.

Case study oriented publications. In 1999, working cooperatively with Gulf Publishing, PTTC developed the *Petroleum Technology Digest (PTD)*, which featured nine case studies. Distributed as a supplement with *World Oil's* September 1999 issue to their subscribers in North America who are independent producers. Plans are in place for two supplements during 2000 – in May and September.

Interaction with other national organizations. PTTC's interaction and coordination with national organizations continues to be a unifying force in the upstream U.S. petroleum industry.

Continued progress in implementation of PTTC's business plan is expected to further increase PTTC's technology transfer impact.

APPENDICES

- A. Regional Accomplishments**
- B. Roster – Regional Lead Organizations**
- C. Roster – Board of Directors, Alternates, and Committees**
- D. Guide for Professional and Ethical Conduct**
- E. Conflict of Interest Policy Statement**
- F. Statement of Identity**
- G. PTTC’s Goal Categories**

SUMMARY OF PTTC REGIONAL ACTIVITY - FY99

PTTC Region	Workshops			Contacts		Newsletter Function (distribution)	Status (considering statistics alone)
	#	Attend.	% Change in Attend. Vs. FY98	#	% Change Vs. FY98		
Appalachian	11	372	8	345	109	Infrequent Columns	Holding steady
Central Gulf	8	319	6	650	53	Regular Columns	Holding steady
Eastern Gulf	11	322	(26)	432	12	Newsletter (600)	Holding steady
Midwest	5	190	0	774	229	Newsletter (2700)	Holding steady
N. Midcontinent	10	776	152	2,764	23	Newsletter (4700)	Major increase in presence/impact
Rocky Mountain	31	1,524	502	1,212	16	Newsletter (1200)	Major increase in presence/impact
S. Midcontinent	24	1,008	28	1,468	1	Newsletter (6400)	Steady increase in presence/impact
Southwest	6	522	39	566	(8)	Newsletter (3400)	Steady increase in presence/impact
Texas	5	163	(65)	954	(14)	Infrequent Columns	Overall setback, but promising impact of Mentor
West Coast	17	752	(22)	1,390	(48)	Inactive this year	Holding steady, or modest decrease in presence/impact
Total All Regions	128	5,948	34	10,555	3	Steady increase in presence/impact even though the year was very difficult for PTTC's primary audience—independent producers	

Appalachian Region

Table 1 – Appalachian – FY99 Summary Statistics									
Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Mo.
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	1	38	1	11	2	49	73	593	1,096
2nd Qtr	1	50	1	15	2	65	111	747	1,278
3rd Qtr	3	85	1	14	4	99	109	593	1,096
4th Qtr	2	112	1	9	3	159	52	831	1,797
FY99	7	240	4	49	11	372 (34 avg)	345	-----	-----
% Change versus FY98						8	109	-----	-----

* *Newsletter*: Intermittent articles in producer association newsletters

Table 2 – Appalachian – FY99 Workshops/Events					
TECH, SOFT, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
SOFT	PTTC	Generating Prospects Using a PC-Based Program	Morgantown, WV	11/12/98	11
TECH	PTTC	Secondary Gas Recovery—A Case Study, Henderson Dome, Pennsylvania	Pittsburgh, PA	11/19/98	38
SOFT	Cosponsor	Geological/Geophysical Mapping for the 21 st Century	Morgantown, WV	3/2/99	15
TECH	PTTC	Optimizing Production and Operating Efficiency of Existing Wells (by Ohio Geol. Survey)	Columbus, OH	3/23/99	50
TECH	PTTC	Wireline Logging & New Technologies for the Appalachian Basin	Morgantown, WV	4/7-8/99	41
TECH	PTTC	Affordable Geophysics in Tough Times	Morgantown, WV	5/18/99	30
TECH	PTTC	Microbial Options for Increasing Oil Recovery	Zanesville, OH	6/21/99	14
SOFT	PTTC	Software Productivity Tools (Kentucky Geological Survey)	Lexington, KY	6/25/99	14
TECH	PTTC	Expanding the Petroleum Potential of the Appalachian Basin (PA Geological Survey)	Pittsburgh, PA	8/23/99	38
TECH	Cosponsor	New and Novel Fracture Stimulation Technologies for Revitalization of Existing Underground Gas Storage Wells (ARI/DOE)	Pittsburgh, PA	8/23/99 Canceled by ARI	11 had preregistered
TECH	PTTC	Coal Bed Methane Production and Potential in Eastern Basins (w KY Geol. Survey & Midwest)	Lexington, KY	9/16/99	112
SOFT	PTTC	Creating Oil- & Gas-Related Web Pages	Morgantown, WV	9/28/99	9
Total FY99 Attendance (11 workshops, 77% of attendees from E&P industry)					372

Regional Website: Usage remained relatively constant throughout the year—averaging 600 to 800 user sessions per month. On the website, the region focuses on providing information about oil and gas data, case studies and planned events (by PTTC and others) in the region. Oil and gas data include that available from Appalachian states, plus national sources such as the *Atlas of Major Appalachian Gas Plays* and DOE's TORIS database. The case study section provides fairly extensive coverage of information from regionally-relevant studies, including specific field case studies. To stimulate more usage, staff are examining how to develop a more comprehensive regional calendar, giving individuals a reason to come to the website frequently.

Workshops/Events: Attendance data were analyzed during late 1999 to determine if PTTC was still reaching a new audience, or if the majority of workshop attendees were repeat attendees. 43% of attendees were still first timers while another 22% had attended only two workshops, confirming that there is still a large group of individuals yet to be reached. 11% of attendees regularly attended regional workshops. Beginning early in 1999, the region began incorporating a key question into the workshop feedback forms: Have you used any new technologies based on knowledge gained through PTTC? 42% of those who have responded indicate "Yes."

The case study-oriented industry crisis workshop (Optimizing Production and Operating Efficiency—3/23/99) presented practical examples of technologies that independent operators could apply to realize upside potential, not just focus on cost reduction. Exploration-oriented workshops (Expanding Petroleum Potential in the Appalachian Basin and Coal Bed Methane Production and Potential) drew relatively large audiences. Microbial technologies demonstrated in a DOE Class 1 project were featured in a June 21st workshop in Ohio. Also, stimulation advances in gas storage operations were supposed to be featured technologies demonstrated with DOE's gas program, but the workshops were ultimately canceled by Advanced Resources International.

Resource Center: In the summer of 1999, on-site staffing of the resource center was eliminated, recognizing that few individuals personally visited the resource center. Staff are still available to respond to inquiries, and the center is open for scheduled visits. During FY00, the region is evaluating several longer-term options for the resource center, including a potential cooperative effort with AAPG providing software training.

Outreach/Contacts: Although still relatively low, contacts during the year doubled, confirming growing industry interest. RLO staff made a concerted effort to establish a PTTC presence at events throughout the region, such as a booths at the SPE and AAPG Eastern Regional Meetings. RLO Director Doug Patchen regularly attends regional association meetings and professional society meetings (over 15 during the fiscal year), networking with industry and distributing information about PTTC events. His other activities (AAPG, Coal Bed Methane Forum, and the Potential Gas Committee), although not directly part of PTTC, strengthen its technical image and resources. Dr. Patchen was particularly helpful in coordinating with AAPG about developing a coal bed methane article for their *Explorer* publication.

The region has been challenged in developing an effective newsletter function. Although articles are regularly submitted to local producer associations, few actually get published. During FY00, RLO staff and PAG members are working together to strengthen the newsletter function.

Problem Identification: Beyond input from the Producer Advisory Group, the region relies on three sources for input on what producers want to learn more about—feedback from workshop attendees, comments received while networking at regional events, and inquiries received at the resource center. As an example, RLO staff quickly responded to industry interest spawned by major gas discoveries in the Ordovician Trenton Limestone by scheduling a Trenton-Black River prospect workshop in November 1999.

Case Studies: Speakers in the March 1999 crisis-oriented workshop focused on opportunities for realizing upside potential, not just reducing costs. This reflects that many Appalachian operators have already done the cost-cutting and that new approaches are their primary remaining option. Operators responded to these case studies that covered a broad technology spectrum. Operators also responded well to the Swan Creek Field case study presented in the August workshop on "Expanding the Petroleum Potential of the Appalachian Basin." This case study demonstrates how a small operator, acquiring a property from a major, combined newer 3-D seismic technologies with prior geochemical work, leading to a major discovery in an under-explored area.

Central Gulf Region

Table 1 – Central Gulf – FY99 Summary Statistics									
Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Mo.
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	1	27	---	---	1	27	127	1,465	3,267
2nd Qtr	3	144	---	---	3	144	160	1,793	3,581
3rd Qtr	2	62	---	---	2	62	193	1,853	4,104
4th Qtr	2	86	---	---	2	86	170	1,825	4,388
FY99	8	319	---	---	8	319 (40 avg)	650	-----	-----
% Change versus FY98						6	53	-----	-----

* *Newsletter*: Regular columns in LIOGA newsletter

Table 2 – Central Gulf – FY99 Workshops/Events					
TECH, SOFT, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
TECH	PTTC	Power Cost Reduction Methods in Oil & Gas Operations	Shreveport, LA	10/13/98	27
OTHER	Cosponsor	Y2K Issues (w LIOGA)	Lafayette, LA	3/16/99	56
TECH	PTTC	Power Cost Reduction Methods in Oil & Gas Operations	Lafayette, LA	3/24/99	24
TECH	Cosponsor	Optimization of Gas Well Completion & Production Operations (w/SPE)	New Orleans, LA	3/30/99	64
TECH	Cosponsor	Optimization of Gas Well Completion & Production Operations (w/SPE)	Lafayette, LA	5/18/99	42
TECH	PTTC	Enhanced Production Methods	New Orleans, LA	6/23/99	20
TECH	Cosponsor	Coiled Tubing Operations & Safety Practices (Westport/DOE)	Lafayette, LA	7/20/99	48
TECH	Cosponsor	Developing a Model for Coal Bed Methane E&P Technology in Louisiana (w LSU's BRI)	Baton Rouge, LA	9/1/99	38
Total FY99 Attendance (8 workshops, 92% of attendees from E&P industry)					319

Regional Website: Website usage remains relatively constant at around 1800 user sessions per month. Except for the addition of past workshop materials early in FY99, no major changes/additions were made to the website. Only minor staff effort is required for routine maintenance.

Workshops/Events: Conditions among Louisiana's operators during the recent oil price crisis affected the regional workshop program. The large multi-day workshop developed by LSU's Basin Research Institute, originally planned for January 1999, was rescheduled for October 1999 in Houston, Texas, due to low registration (it was subsequently canceled there also). Not all was gloom though as operators were very receptive to the information shared in the "Power Cost Reduction" workshops (Shreveport in October 1998 and Lafayette in March 1999). Attendance was also good at two cooperative workshops with SPE on "Optimization of Gas Well Completion and Production Operations." Staff also coordinated with Westport Technology/DOE in hosting a workshop on "Coiled Tubing Operations and Safety Practices." Even with improving oil prices, staff is noting continued low activity and operator pessimism.

Resource Center: The region maintains a strong product emphasis, developing and updating on a biennial basis the Louisiana Desktop Well Reference (LDWR) – a GIS-oriented production and well database – and the Louisiana Environmental Handbook on CD-ROM. During FY99, about 70 copies of the LDWR were sold, while nearly 20 copies of the Environmental Handbook were sold. The LDWR in particular has been well received by industry, and inquiries have been received from other states about the technology/approach used to develop the product. For inquiries, the region benefits from Barbara Kavanaugh's and the Center for Energy Studies' experience in researching oil and gas information.

Outreach/Contacts: Staff highly leveraged the information and case studies presented in the "Power Cost Reduction" workshops, coordinating articles for LIOGA and for the *American Oil and Gas Reporter* (12/98). Early in 1999, Regional Director Bob Baumann participated in a documentary for PBS/Discovery Channel on offshore technology. The region also exhibits at major regional events, including some in Texas since the Gulf Coast operator audience overlaps PTTC's Central Gulf and Texas regions. During FY99, exhibits were staffed at the Gulf Coast Association of Geological Societies (10/98 in Corpus Christi, TX), LIOGA (3/99 in Lafayette), North American Prospect Expo (1/99 in Houston, TX), and the Gulf Coast Prospect Expo (9/99 in Lafayette). The region contributes regular columns in LIOGA's newsletter rather than publish a separate regional newsletter.

Staff periodically visit operators to discuss their technology needs and gain information about the technologies that are being applied (in many cases, identifying case studies for future workshops). These visits are partially responsible for the approximate 50% increase noted in contacts. Interaction spawned by LSU's Center for Energy Studies with state government, other states and industry organizations also indirectly benefits PTTC.

With minor support from the region, Dr. Wojtanowicz continues development and transfer of Downhole Water Sink technology. A 109-page proprietary report that will become public information at a later date was prepared for consortium members. Information sessions are held individually or in small groups with interested companies.

Problem Identification: Beyond input from the Producer Advisory Group, the region relies on three additional sources of information to determine what producers want to learn more about—feedback from workshop attendees, comments received while networking at regional events, and individual input during operator site visits.

Case Studies: In the power cost reduction workshops, Ray Lasseigne of TMR Exploration presented a well-documented case study of savings, about \$9000 per month, from the use of synchronous induction generators and Power Shafts in the Murray Lake Field (Louisiana). Attendees at the Shreveport workshop had the opportunity for a field site visit. Impact of the information was highly leveraged through post-workshop coverage.

segment of the regional audience. Follow-on activity to two workshops (microbial and Basin MODR workshops) resulted in R&D proposals under two DOE programs, one of which won an award in DOE's Class Program Revisited program. From inception, the region has transferred results and technologies from regional R&D projects through workshops, newsletter and the website.

Resource Center: Being remote from producers, resource center activity consists primarily of responding to industry inquiries. When needed, industry has access to a vast amount of oil and gas data and geological/core information through the resource center. In addition, the Jackson satellite operated by the Mississippi Office of Geology performs a similar function.

Outreach/Contacts: Contacts showed a modest increase, confirming industry's continued interest even though total workshop attendance was down. Regional Director Ernie Mancini frequently attends geological-oriented meetings, including national and international events, representing both PTTC and the University of Alabama. This activity reinforces the region's technical image in addition to stimulating thoughts for future workshops.

The region's two-page quarterly newsletter, which consistently comes out on time, is distributed to about 600 people with an estimated 90% from the E&P industry. Content focuses on news about upcoming events and technical information from recent workshops.

Problem Identification: Beyond input from the Producer Advisory Group, the region primarily relies on feedback from workshop attendees to determine what producers want to learn more about—and history indicates, to date, a strong interest in geological- or exploration-oriented topics.

Case Studies: Staff noted several case studies of special interest to operators in the region. Hughes Eastern's application of microbial technology in the North Blowhorn Creek Field in Alabama (a DOE Class project) demonstrated increased oil recovery through stimulation of in situ microbes. Consultants speaking in the "Surface Hydrocarbon Detection" workshop presented data that provided compelling evidence of the value of integrating geochemical techniques with 3-D seismic technologies. Results/conclusions from the extensive study of the Mississippi Interior Salt Basin project at the University of Alabama were of high interest, as was the North Choctaw Ridge case study.

Midwest Region

Table 1 – Midwest – FY99 Summary Statistics

Time Period	Workshops/Activities						No. of Contacts*	Website		
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Mo.	
	#	Attend.	#	Attend.	#	Attend.				
1st Qtr	2	54	---	---	2	54	269	1,669	3,874	
2nd Qtr	3	136	---	---	3	136	277	753	1,467	
3rd Qtr	---	---	---	---	---	---	110	2,173	5,082	
4th Qtr	---	---	---	---	---	---	118	2,323	6,523	
FY99	5	190	---	---	5	190 (38 avg)	774	-----	-----	
% Change versus FY98							0	229	-----	-----

* *Newsletter*: Semi-annual newsletter with current distribution of about 2700

Table 2 – Midwest – FY99 Workshops/Events

TECH, SOFT, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
TECH	PTTC	Plugging Workshop	Evansville, IN	11/5/98	37
TECH	PTTC	Oilfield Water Technology	Grayville, IL	12/8/98	17
TECH	Cosponsor	Reservoir Engineering (5-day w SPE)	New Harmony, IN	1/25-30/99 (Canceled)	
TECH	PTTC	Low Oil Prices: Pricing, Legal Issues, Electrical Cost Reduction, Exchange of Ideas	Grayville, IL Mt. Vernon, IL	1/22/99 1/29/99	42 33
TECH	PTTC	Wireline Logging Applications for the Michigan Basin (North Midcontinent Region-PfEFFER)	Mt. Pleasant, MI	2/18/99	61
TECH	Cosponsor	New and Novel Fracture Stimulation Technologies for Revitalization of Existing Underground Gas Storage Wells (ARI/DOE)	Pontiac, IL	8/25/99 Canceled by ARI	12 had preregistered
TECH	Cosponsor	Coal Bed Methane (w KY Geological Survey and Appalachian Region)	Lexington, KY	9/16/99	Reported by Appalachia
Total FY99 Attendance (6 workshops, 90% of attendees from E&P industry)					190

Regional Website: Reported statistics are for the primary regional website at the Illinois State Geological Survey. Usage and page views continue to increase. Traffic has been analyzed and found to be primarily for oil and gas data and statistics. The Michigan outreach program, which is being continued into FY00, also includes a website. On that site, effort during the year focused on placing their well database on-line—from 50% at the start of the year to near 100% at year-end. Modest PTTC support to Indiana and Kentucky for website development ended during FY99, but both Indiana and Kentucky remain cooperative with PTTC efforts despite the end of funding.

Workshops/Events: With very mature production, producers in the Illinois Basin were extremely hard hit by the adverse conditions early in the year. A five-day reservoir engineering workshop, a cooperative event with SPE, scheduled for January 1999 was canceled. Regional staff responded promptly to PTTC's Industry Crisis Action Plan, developing and conducting two crisis-oriented workshops by the end of January 1999.

The region supported two inter-regional cooperative efforts. The Michigan "Wireline Logging Applications" workshop was presented by staff from the Kansas Geological Survey (KGS), representing PTTC's North Midcontinent Region. KGS staff provided exposure/training in the use of PfEFFER, a low-cost spreadsheet-

based log-analysis program developed by KGS. When contacted about six months later, 40% of those who responded said they had had a chance to put into practice the information/concepts presented in the workshop.

Late in the year, staff coordinated with the Kentucky Geological Survey and PTTC's Appalachian Region to present a coal bed methane workshop in Lexington, KY. Staff also worked effectively with a regional SPE gas storage group and Advanced Resources International (ARI) promoting a workshop on "Fracture Stimulation Technologies for Gas Storage Applications" developed in a DOE R&D program. This workshop was ultimately canceled by ARI due to low registration.

Resource Center: Staff continue to solicit and organize Illinois Basin core and waterflood data from industry. Ultimately, the core/waterflood database will be made electronically available via CD-ROM and/or the website. In conjunction with the Illinois State Geological Survey, the resource center staff have released well development maps that are being sold to industry. Customized maps can also be provided.

Outreach/Contacts: Contacts more than doubled during FY99, demonstrating strong industry interest even though workshop attendance remained flat. Staff make a concerted effort, both in the Illinois Basin and in Michigan, to establish a PTTC presence at regional events, attending association and professional society meetings and exhibiting where appropriate. The six or more page semi-annual newsletter, currently distributed to about 2700 individuals, serves as another media for contacting operators about future events, and summarizing insights from past regional activities.

Problem Identification: The region conducts basically separate but parallel problem identification efforts in the Illinois Basin and Michigan. Beyond input from the Producer Advisory Group, the region relies on three sources for input about what producers want to learn more about—feedback from workshop attendees, comments received while networking at regional events and individual input during site visits/personal contacts.

Case Studies: Staff solicit case studies from regional producers, but response to date is minimal. This is due to depressed conditions in the industry and, in some cases, the operator's desire to keep success quiet, as the information provides a competitive edge.

North Midcontinent Region

Table 1 – North Midcontinent – FY99 Summary Statistics

Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Month
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	1	92	---	---	1	92	698	5,252	20,504
2nd Qtr	4	347	---	---	4	347	873	5,674	27,151
3rd Qtr	1	123	---	---	1	123	636	6,521	29,751
4th Qtr	2	142	2	72	4	214	557	8,322	36,490
FY99	8	704	2	72	10	776 (78 avg)	2,764	-----	-----
% Change versus FY98						152	23	-----	-----

* *Newsletter*: Quarterly newsletter with current distribution over 4700

Table 2 – North Midcontinent – FY99 Workshops/Events

TECH, SOFT, INTERNET, or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
TECH	PTTC	Modern Techniques in Wireline Logging (exhibits/revenues from three vendor companies)	Wichita, KS	11/19/98	92
TECH	PTTC	Fundamentals of PFEFFER (for Midwest)	Mt. Pleasant, MI	2/18/99	Reported by Midwest
TECH	PTTC	Best Practices for Production Shut-Down	Wichita, KS	2/23/99	99
TECH	PTTC	Best Practices for Production Shut-Down	Iola, KS	2/25/99	72
TECH	PTTC	Best Practices for Production Shut-Down	Hays, KS	3/2/99	79
TECH	Cosponsor	TORP 13 th Oil Recovery Conference	Wichita, KS	3/17-18/99	97
TECH	PTTC	Coal Bed Methane	Wichita, KS	6/3/99	123
SOFT	Cosponsor	Applied 3-D Seismic Interpretation (AAPG mtg)	Wichita, KS	8/28/99	
INTERNET	Cosponsor	Internet for the Petroleum Professional (KIOGA)	Wichita, KS	8/30/99	
TECH	Cosponsor	3-D Seismic for Independent Operators (KIOGA)	Wichita, KS	8/30/99	
TECH	Cosponsor	Latest Advances in Concepts & Technology (w Rocky Mountain Region @ AAPG reg. mtg)	Wichita, KS	8/31/99	100
Total FY99 Attendance (10 workshops, 88% of attendees E&P industry)					776

Regional Website: Website usage is very high, 6000 or more sessions per month, for a state with a relatively small producer audience. Usage can be directly attributed to the strong emphasis on electronic data (Digital Atlas, field studies, R&D project results) by the Kansas Geological Survey (KGS). Significant content additions are continually being made. Increasing average session lengths, currently at about 25 minutes, confirm that producers are finding information of value. Courses have been developed on how to use the Internet, logging (using the PFEFFER software developed by KGS), and reservoir simulation (using DOE Boast III software).

Workshops/Events: Overall workshop more than doubled, with consistently high and sometimes record attendance at workshops despite adverse industry conditions. Responding to PTTC's Industry Crisis Action Plan, the region offered workshops in Wichita, Iola and Hays on "Best Practices for Production Shut-Down." An analysis performed by the KGS of the impact of low oil and gas prices on the Kansas oil and gas industry was also posted on the regional website.

For some workshops, depending on the topic, selected vendor exhibits are incorporated within the workshop. For example, three vendors exhibited at the “Modern Techniques in Wireline Logging” workshop in November 1998. Exhibit fees, which partially offset workshop costs, are kept low to encourage vendor participation. Since workshops draw people with strong interest in the topic, the exhibit can be particularly fruitful for vendors having technologies appropriate for the topic.

Major cooperative efforts were the 13th Annual TORP conference (March 1999) and a series of workshops held in conjunction with KIOGA and AAPG meetings in August 1999. Sandra Mark from the Rocky Mountain Region contributed to the 3-D seismic workshops held in conjunction with the AAPG meeting. In another inter-regional effort, staff from KGS conducted a logging workshop in Michigan for the Midwest Region.

Attendance of 123 at the coal bed methane workshop demonstrates how industry will respond when relevant information on high interest topics is provided. Post-workshop effort led to additional coverage in the trade press and staff provided essential information for a coal bed methane article developed by PTTC for AAPG.

Resource Center: Located a distance from most producers, resource center activity consists primarily of responding to industry inquiries. When needed, industry has access to the geological/data resources at the nearby KGS. The region also maintains a satellite, essentially a literature/Internet connection desk, in Wichita, at the Kansas Geological Society.

Outreach/Contacts: Already high contact levels, relative to most regions, increased by nearly 25% during FY99. This trend, when combined with a 150% increase in overall workshop attendance, demonstrates that the local PTTC program is accepted in the region as a major technology player. For many workshops, attendees come from several states, which indicates influence beyond the region’s boundaries. Distribution of the quarterly newsletter increased considerably this year, currently at about 4700, when the mailing list was expanded to include all operators listed with the Kansas Corporation Commission. As a result, some new faces were seen at the crisis workshops.

With other groups at the University of Kansas, staff are designing a permanent education exhibit at the recently built Kansas Energy Education Center in Great Bend, Kansas. The region is also a strong supporter of the Kansas CO₂ Initiative, being involved in technical work (through KU) as well as technology transfer.

Problem Identification: Beyond input from the Producer Advisory Group, the region relies on three sources for input on what producers want to learn more about—feedback from workshop attendees, comments received while networking at regional events and inquiries received at the resource center.

Case Studies: Responses on workshop feedback forms indicate that many operators would be willing to share their success stories, but few have the time to organize and document the data, let alone participate in PTTC events. Should additional funding become available for a Mentor, the region wants a priority placed on helping document regional case studies that can be shared in workshops and in the newsletter/website.

Rocky Mountain Region

Table 1 – Rocky Mountain – FY99 Summary Statistics									
Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Mo.
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	4	270	4	48	8	318	152	626	1,800
2nd Qtr	4	287	5	76	9	363	390	1,517	5,973
3rd Qtr	4	752	5	46	9	798	316	3,232	13,573
4th Qtr	---	---	5	45	5	45	354	2,604	12,323
FY99	12	1,309	19	215	31	1,524 (49 avg)	1,212	-----	-----
% Change versus FY98						502	16	-----	-----

* Newsletter: Quarterly newsletter with current distribution over 1200

Table 2 – Rocky Mountain – FY99 Workshops/Events					
TECH, SOFT, INTERNET, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
TECH	PTTC	Waterflood (SPE/IPAMS)	Denver, CO	10/5-9/98	17
SOFT	PTTC	Integrated PC Applications—GeoGraphix	Golden, CO	10/6/98	7
TECH	Cosponsor	Fractured Reservoirs (w Utah Geological Survey)	Salt Lake City	10/23/98	62
SOFT	PTTC	3-D Seismic (Seismic Micro Technology)	Golden, CO	10/28/98	13
		Day One (Data Loading), Day Two (Basic Interpretation), Day Three (Advanced Interpr.)		10/29/98	16
				10/30/98	12
TECH	Cosponsor	Innov. Applns. of New Techn. (IPAMS/RMAG)	Denver, CO	11/12/98	99
TECH	Cosponsor	Comp. Rsvrsin Rocky Mountain Basins (RMAG).	Denver, CO	11/13/98	92
SOFT	Cosponsor	GES Basic Training (GeoGraphix)	Golden, CO	1/21/99	15
SOFT	Cosponsor	Rockware (Rockworks 98 & LogPlot 98)	Golden, CO	1/28-29/99	11
INTERNET	Cosponsor	Internet Guide for Petroleum Professionals	Golden, CO	2/6/99	4
TECH	Cosponsor	Coal Bed Methane Short Course (SPE)	Billings, MT	2/16-17/99	182
SOFT	Cosponsor	3-D Seismic Basic Interp. (Seismic Micro Tech)	Golden, CO	2/19/99	6
	Cosponsor	How to Prepare Multimedia Technical Reports	Golden, CO	3/6/99	
SOFT	Cosponsor	New Media Technologies for the Tech. Prof.	Golden, CO	3/6/99	
TECH	Cosponsor	Best Practices for Production Shut-Down (IPAMS)	Denver, CO	3/12/99	
TECH	Cosponsor	USGS NPR-Alaska Core Workshop	Denver, CO	3/24-26/99	
TECH	Cosponsor	Emerging Resources in the GGRB (GRI, IPAMS)	Denver, CO	4/26/99	
TECH	Cosponsor	Career Management for the Technical Professional	Denver, CO	5/14/99	
SOFT	Cosponsor	GES Basics & Advanced (GeoGraphix)	Golden, CO	5/19-20/99	
TECH	Cosponsor	Minimizing Energy Costs (DOE/NASEO)	Vernal, UT	5/26/99	31
SOFT	Cosponsor	3-D Pack Basic Training (Seismic Micro Tech)	Golden, CO	6/9-11/99	10
	Cosponsor	3-D Visual. w Low-Cost Software (Slicer/Dicer)	Golden, CO	6/14/99	5
	Cosponsor	Fundamentals of Geologic Data Management	Golden, CO	6/16-17/99	
	Cosponsor	Future of Coalbed Methane Rockies (RMAG/GRI)	Denver, CO	6/22/99	
	Cosponsor	3-D Applications of Dynamic Graphics Earthvision	Golden, CO	6/24-25/99	
	Cosponsor	3-D Applications (Dynamic Graphics)	Golden, CO	7/28-29/99	6
	Cosponsor	3Dpak Basic Training (Seismic Micro-Techn.)	Golden, CO	8/20/99	5
TECH	Cosponsor	Latest Advances in Concepts & Technology (w North Midcontinent Region @ AAPG reg. mtg)	Wichita, KS	8/31/99	Reported by NMC
SOFT	Cosponsor	Tieing Geology to Seismic (GMA LogM)	Golden, CO	9/15-17/99	10
	Cosponsor	Internet Guide for Petroleum Professional	Golden, CO	9/22-23/99	
	Cosponsor	GES Basic Training (GeoGraphix)	Golden, CO	9/30/99	11
Total FY99 Attendance (31 workshops, 90% of attendees from E&P industry)					1524

Regional Website: Usage basically quadrupled during the year, from 600+ to 2600-3000 sessions/month. Average session length increased about 50%. With the extensive workshop schedule, frequent maintenance is required to keep site material current. The regional newsletter is also placed on the website.

Workshops/Events: Overall workshop attendance increased by a factor of five during the year. Even allowing for very high attendance at a couple major cooperative events (203 at Emerging Resources in the Greater Green River Basin with IPAMS/GRI; 500 at Future of Coal Bed Methane in the Rockies with RMAG/GRI), attendance still tripled versus FY98. This occurred even with attendance at software training classes sometimes limited by the number of workstations available. The number of workshops increased from 12 to 31, another major increase with one having a specific survival emphasis. Early in 1999, the region began incorporating a key question in the workshop feedback forms: Have you used any new technologies based on knowledge gained through PTTC? 38% of those who have responded indicate "Yes."

During FY99, 18 software workshops providing training on products from several vendors were conducted. Attendance averaged 10 per class. For multiple-day classes, AAPG provided additional funding so fees could be maintained at lower levels. Additionally, the region offered two Internet classes and 11 technology workshops, totaling 31 workshops in all. Among frequent regional cosponsors such as IPAMS, RMAG and GRI, the region has become known for its promotional abilities so groups are seeking PTTC as a partner.

The region supported technology transfer from DOE-related R&D projects, presenting two workshops in Utah ("Fractured Reservoirs" workshop in Salt Lake City in 10/98; "Power Cost Savings" workshop with DOE/NASEO in Vernal in 5/99) with appropriate cosponsors. In another cooperative effort, Sandra Mark worked with the North Midcontinent Region for an AAPG regional meeting in Wichita, KS.

Resource Center: The software training center, which is a cooperative effort of CSM/AAPG/PTTC/private donors, unofficially opened in late 1998. A formal opening ceremony occurred in May 1999 once the Unix lab was open. Most resource center effort revolves around planning and executing the software training mission. Recognizing Sandra Mark's expertise, PTTC Headquarters relied on her as the primary developer of its *E&P Software Sampler* on CD-ROM in late 1998. She also was moderator of a "software" shortcourse presented at DOE's oil and gas R&D meeting in Dallas, TX, in June 1999.

Outreach/Contacts: The inaugural issue of the regional newsletter was distributed to about 350 people late in 1998. In addition to calendar information, the newsletter focuses on summarizing reports/articles believed to be of interest within the region. By yearend, distribution had grown to over 1200. Although most activities are held in the Denver/Golden area of Colorado, the region periodically holds events in Montana/Wyoming, and this year expanded activity into Utah. Plans are in place to find ways to serve North and South Dakota during FY00.

Problem Identification: Beyond input from the Producer Advisory Group, the region relies primarily on feedback from workshop participants and informal contacts through inquiries or outreach to determine what producers want to learn more about.

Case Studies: Information and data on several regionally relevant case studies are located on the website. The extensive activity schedule during FY99 limited the time available for additional case study work.

South Midcontinent Region

Table 1 – South Midcontinent – FY99 Summary Statistics									
Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User** Sessions/Mo.	Avg. Page Views/Mo.
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	5	196	---	---	5	196	339	1,864	NA
2nd Qtr	3	234	---	---	3	234	328	2,864	NA
3rd Qtr	9	164	---	---	9	164	377	1,700	NA
4th Qtr	7	414	---	---	7	414	424	2,053	NA
FY99	24	1,008	---	---	24	1,008 (42 avg)	1,468	-----	-----
% Change versus FY98						28	1	-----	-----

* *Newsletter*: Quarterly newsletter with current distribution over 6400

** Statistics may be inconsistent with other regions since current OU server does not allow use of WebTrends™ software

Table 2 – South Midcontinent – FY99 Workshops/Events					
TECH, SOFT, INTERNET, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
TECH	PTTC	Hartshorne Play-Based workshop (w OGS)	Muskogee, OK	10/4/98	64
TECH	Cosponsor	Hartshorne Field Trip (w OGS, 2-day fld trip)	McAlester, OK	10/10-11/98	
TECH	Cosponsor	Hartshorne Field Trip (w OGS, 2-day fld trip)	McAlester, OK	10/12-13/98	49
TECH	PTTC	Waterflood workshop (w OGS)	Smackover, AR	11/19/98	18
TECH	Cosponsor	Layton/Osage-Layton Workshop (OCGS, OGS)	Oklahoma City, OK	12/8/98	27
TECH	Cosponsor	Booch Play-Based workshop (w OCGS & OGS)	Oklahoma City, OK	2/5/99	23
TECH	Cosponsor	Silurian, Devonian, and Mississippian Geology in Southern Midcontinent (OGS and DOE NPTO)	Norman, OK	3/23-24/99	193
TECH	Cosponsor	Hartshorne Field Trip (w OGS, 2-day fld trip)	McAlester, OK	3/31- 4/1/99	18
TECH	Cosponsor	Well Plugging (Marginal Well Commission)	Broken Arrow, OK	4/7/99	
INTERNET	Cosponsor	NRIS Data Access and Mapping (GIS)	Tulsa, OK	4/9/99	
TECH	Cosponsor	Well Plugging (Marginal Well Commission)	Oklahoma City, OK	4/15/99	
TECH	Cosponsor	Well Plugging (Marginal Well Commission)	Woodward, OK	4/21/99	6
INTERNET	Cosponsor	NRIS Data Access and Mapping (GIS)	Norman, OK	5/7/99	6
TECH	Cosponsor	Cleveland & Peru FDD Workshop (OCGS & OGS)	Oklahoma City, OK	5/30/99	19
TECH	Cosponsor	OCC Selected Forms (Marginal Well Com.)	Oklahoma City, OK	6/2/99	21
INTERNET	Cosponsor	NRIS Data Access and Mapping (GIS)	Tulsa, OK	6/18/99	14
TECH	Cosponsor	OCC Selected Form (Marginal Well Comm.)	Tulsa, OK	6/30/99	26
TECH	Cosponsor	2-D and 3-D Seismic for Operators (w OGS)	Oklahoma City, OK	7/29/99	106
TECH	Cosponsor	Tax Incentive Applications (Marginal Well Com)	Tulsa, OK	8/17/99	74
TECH	Cosponsor	Due Diligence for Independent Operators (MWC)	Oklahoma City, OK	8/18/99	30
TECH	Cosponsor	Tax Incentive Applications (Marginal Well Com.)	Oklahoma City, OK	8/19/99	
TECH	Cosponsor	Tax Incentive Applications (Marginal Well Com.)	Pawhuska, OK	9/21/99	
TECH	Cosponsor	Beam Pump Optimization (Marginal Well Com.)	Oklahoma City, OK	9/23/99	
TECH	Cosponsor	Bartlesville FDD Play Workshop (OCGS-OGS)	Oklahoma City, OK	9/29/99	
Total FY99 Attendance (24 workshops, 87% of attendees from E&P industry)					

Regional Website: To date, the region has placed only minimal emphasis on website development because the PAG believes that small producers, the major portion of the regional audience, do not yet view the Internet as an important information tool. Now that production/completion data is available on the Internet through

Oklahoma University Geo Information Systems, small operators may increase their awareness/use of the Internet.

Workshops/Events: Overall workshop attendance increased by nearly a third, in large part reflecting increased activity from cooperative efforts with other groups. With its own funding, the Oklahoma Geological Survey (OGS) performs detailed studies (typically one or two a year) and prepares finished technical reports. This additional funding for technical work and publications results in a much more professional product than PTTC funds alone can provide. PTTC funds become involved when conducting the workshops without OGS or other sponsors.

Half-day versions of play-based workshops conducted earlier with the Oklahoma City Geological Society help leverage resources. And during FY00, further leveraging is planned with the Tulsa Geological Society. After a year or two lull, cooperative efforts with Oklahoma's Marginal Well Commission (MWC) are picking up again. Their field-level, operations-oriented workshops, conducted at locations convenient for small operators, add a valuable element to the regional program. Geo Information Systems is also conducting Internet/mapping workshops at selected locations across the state with the intent of stimulating industry usage of NRIS production/completion data.

Resource Center: The region, MWC, and Interstate Oil and Gas Compact Commission (IOGCC) are working together to provide library/information resources at the resource center. A few computer stations are also maintained at the Rock Creek facility for demonstrations, which primarily occur by appointment. Periodically, Geo Information Systems conducts informal software/data workshops, or "Friday Free-For-Alls" at the resource center. However, the primary activity of the resource center is to respond to inquiries from industry.

Outreach/Contacts: Contacts remained steady, within 1% of the FY98 level. OGS exhibits at many conferences across the country and, since some space is allocated to the South Midcontinent region, PTTC receives additional regional and national exposure.

The region's quarterly newsletter, whose timing was very consistent this year, is distributed to 6400 people with at least two-thirds from the E&P industry. In addition to calendar information, the content focuses on presenting technical detail from past or upcoming workshops.

Problem Identification: Beyond input from the Producer Advisory Group, the region relies on feedback from workshop attendees and insight from contacts/inquiries with producers to determine what topics are of highest interest.

Case Studies: Particularly in the workshops developed by OGS, staff work hard to identify and incorporate several field case studies in each workshop.

Southwest Region

Table 1 – Southwest – FY99 Summary Statistics									
Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Mo.
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	2	130	---	---	2	130	211	4,257	8,027
2nd Qtr	---	---	1	35	1	35	45	NA	NA
3rd Qtr	1	32	---	---	1	32	45	6,278	11,824
4th Qtr	2	325	---	---	2	325	265	NA	NA
FY99	5	487	1	35	6	522 (87 avg)	566	-----	-----
% Change versus FY98						39	(8)	-----	-----

* *Newsletter*: semi-annual PRRC newsletter with current distribution of 3400, plus monthly online newsletter

Table 2 – Southwest – FY99 Workshops/Events					
TECH, SOFT, INTERNET, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
TECH	Cosponsor	CO ₂ Recovery	Socorro, NM	10/28/98	85
TECH	Cosponsor	Fractured Reservoirs	Socorro, NM	10/29/98	45
SOFT/OTHER	PTTC	Excel Add-in Software (for filing OCD C-115)	Midland, TX	3/5/99	35
TECH	Cosponsor	Horizontal Drilling	Hobbs, NM	6/11/99	32
SOFT/OTHER	PTTC	Electronic Filing of C115 forms	Farmington, NM	6/14/99	NA
TECH	Cosponsor	Morrow Gas Play (w Roswell Geol. Society)	Roswell, NM	9/15-17/99	200
TECH	Cosponsor	Fractured Reservoir Characterization and Production (w Four Corners Geol. Society)	Farmington, NM	9/29/99	125
Total FY99 Attendance (7 workshops, 82% of attendees from E&P industry)					522

Regional Website: The regional website underwent extensive revisions during FY99. New technologies incorporated in the redesign include: (1) map server to provide graphical interface between well databases maintained by the New Mexico Bureau of Mines and Mineral Resources (NMBMMR), the production database and other databases, (2) a links section searchable by category, (3) new calendar information and (4) other features. Driving forces behind the changes were to provide faster access in a GIS environment. Since the regional website and the original GO-TECH site are integrally related, activity statistics currently cover usage of both sites.

Workshops/Events: Overall workshop attendance increased 39%, primarily through record attendance at two major workshops (“Fractured Reservoir Characterization and Production” in Farmington, 125 people; and “Morrow Gas Play” in Roswell, 200 people). Both of these workshops were gas-oriented, a priority for the region. The region continued its tradition of co-sponsoring the “CO₂ Recovery” and “Fractured Reservoir” Symposiums, forums held early in FY99 by New Mexico Tech’s Petroleum Recovery Research Center (PRRC) group in Socorro. Throughout the year, staff interacted with industry providing training on “C-115 electronic filing.”

Resource Center: Being remote from producers, resource center activity consists primarily of responding to industry inquiries. When needed, industry has access to the information resources of the PRRC and NMBMMR at New Mexico Tech, plus some information is available at a geological library in Roswell.

Outreach/Contacts: Staff played a key role in helping producers become familiar with “electronic filing.” In September 1999, the Director of New Mexico’s Oil Conservation Division (OCD) noted that 90% of gas production and 83% of oil production were now filed electronically. OCD recognized Bob Emery’s efforts on the RLO staff with an award noting his key role in industry’s achieving that level of electronic filing.

Since inception, there has been a PTTC section in PRRC’s semi-annual newsletter, currently distributed to about 3400 people. To provide more timely information, the region implemented an on-line newsletter early in FY99, with separate emphasis for southeast and northwest New Mexico.

Periodically, staff schedule visits with operators in both southeast and northwest New Mexico to hear first-hand what their needs and interests are. Staff also attended major regional events and, at some, operated a PTTC booth. This presence helps PTTC become better known and provides valuable problem identification feedback.

Problem Identification: Early in the year, the Producer Advisory Group (PAG) indicated that, since other groups were already addressing cost cutting and operations issues, the region should focus its efforts on gas-oriented topics. Two workshops, “Fractured Reservoirs” and “Morrow Gas Play,” held late in the year were gas-oriented and drew very high attendance, 125 and 200 respectively. Beyond guidance from the PAG, the region relies on feedback from workshop attendees, inquiries and site visits to stay in tune with industry’s interests, which can be quite different in southeast and northwest New Mexico.

Case Studies: Pioneer Natural Resources, in a DOE Class project, is evaluating CO₂ Gravity Drainage in the Spraberry Trend. Thorough characterization of the Spraberry’s natural fracture system is part of the project. With a more thorough understanding of the natural fracture network, new techniques for evaluating logs were developed. Using these techniques, a new lower-cost completion procedure has been developed. Some well data is available, but broad-scale application has been hindered by the industry slowdown.

Texas Region

Table 1 – Texas – FY99 Summary Statistics									
Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Mo.
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	2	100	---	---	2	100	240 est.	NA	NA
2nd Qtr	1	20	---	---	1	20	240 est.	NA	NA
3rd Qtr	1	18	---	---	1	18	264	48,731	127,364
4th Qtr	1	25	---	---	1	25	210	50,269	339,473
FY99	5	163			5	163 (33 avg)	954	-----	-----
% Change versus FY98						(65)	(14)	-----	-----

* *Newsletter*: intermittent columns; with Mentor startup, receiving good press coverage in Permian Basin

Table 2 – Texas – FY99 Workshops/Events					
TECH, SOFT, INTERNET, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
TECH	Cosponsor	Advances in Fractured Reservoir Characterization (DOE/BDM)	Midland, TX	10/16/98	45
TECH	Cosponsor	Naturally Fractured Reservoirs	Tyler, TX	12/1/98	55
OTHER	Cosponsor	PTTC Discussions after a few monthly TIPRO Tuesday Luncheons in Houston, TX	Houston, TX	2/99- 5/99	N/A
INTERNET	Cosponsor	Use of the Internet (AAPG)	Midland, TX	3/6/99	20
TECH	PTTC	Microbial Options for Increased Oil Recovery	Midland, TX	6/3/99	18
TECH	Cosponsor	New and Novel Fracture Stimulation Technologies for Revitalization of Existing Underground Gas Storage Wells (ARI/DOE)	Houston, TX	8/27/99 (Canceled by ARI)	14 had preregistered
TECH	PTTC	Mudlogging Technology—Mini-workshop	Midland, TX	9/16/99	25
Total FY99 Attendance (5 workshops, 83% (estimated) of attendees from E&P industry)					163

Regional Website: The partial usage statistics that are available confirm very high usage volumes. In midyear, a major revision of the site structure was begun by TIPRO, under subcontract to the Bureau of Economic Geology (BEG). The goal is to make it more consistent with the PTTC mission and the structure of other regional sites. Additional suggestions for structure and content are being considered. With different content, usage may vary. Early in FY00, information evolving from the Permian Basin Mentor effort was incorporated into the regional website structure.

Workshops/Events: Overall attendance was down 65%, reflecting a significant decrease in the number of workshops, 5 in FY99 versus 20 in FY98. In FY99 a series of cooperative workshops with the Texas Railroad Commission did not materialize, and other workshop activity was somewhat reduced due to staffing and other internal changes within the region. Early in FY99, regional workshops focused on fractured reservoirs. The region organized a workshop, held in Midland, featuring R&D results from DOE's fractured reservoir program. Responding to industry interest, a follow-on fractured reservoir workshop was held in Tyler. Although not considered official workshops for the purpose of contract deliverables, the region did organize a few "survival discussions" following TIPRO Tuesday meetings in the spring. Two other workshops supported DOE R&D projects. A June workshop in Midland featured microbial technology demonstrated in a DOE Class 1 project in Alabama. An August effort, ultimately canceled by Advanced Resources International (ARI) due to low

registration, would have featured advanced stimulation technologies for gas storage operations. The fall mini-workshop on “Mudlogging Technology” represents the first of several being coordinated through the Permian Basin Mentor program.

Resource Center: Located a distance from most producers, resource center activity consists primarily of responding to industry inquiries. When needed, industry has access to the vast geological/data resources at the Bureau of Economic Geology at the University of Texas at Austin.

Outreach/Contacts: Even though workshop activity was lower, contacts were not materially affected—being only 15% lower than reported in FY98. Contacts do not reflect the large number of contacts made by TIPRO, some of which are related to PTTC business—primarily the Internet. Responding to industry concerns and to improve service to the Permian Basin, the region implemented a pilot “Mentor” program during FY99. The objective was to provide more personalized service to the large number of producers and consultants in the Permian Basin community. The concept is that the Mentor will network with local producers and consultants, determine their needs, then work together with the RLO to deliver activities/services meeting those needs.

Working with the RLO, Producer Advisory Group (PAG) members from the Permian Basin selected Bob Kiker, who is under a part-time subcontract to the RLO for outreach in the Permian Basin. Mini-workshops, or half-day events, derived from this effort began to occur at year-end. To a limited extent in FY00, Bob Kiker will assist the RLO in statewide outreach. With his engineering background and industry connections, this should strengthen the credibility of the program with independents.

Although planned, a regional newsletter never came to fruition during the year. Early in FY00, the PAG approved the concept of leveraging the Permian Basin mentor’s connections to get broader coverage in association newsletters, a more cost-effective alternative. The approach, if successful, would also provide broader coverage than possible with a regional newsletter.

Problem Identification: Historically, the region has relied on “workshops of opportunity” more so than Producer Advisory Group (PAG) input in developing its workshop schedule. Procedures to assist the program in being more responsive to PAG input, and for the PAG to be more proactive in this area, are being established. The Permian Basin mentor’s efforts are guided by direct producer input through networking and informal interaction.

Case Studies: Most workshops incorporate one or more case studies. The microbial workshop in particular was an extended case study of Hughes Eastern’s experience with microbial technologies in their North Blowhorn Creek Field in Alabama, a DOE Class project.

West Coast Region

Table 1 – West Coast – FY99 Summary Statistics									
Time Period	Workshops/Activities						No. of Contacts*	Website	
	Technology		Softw./Internet		Total			Avg. User Sessions/Mo.	Avg. Page Views/Mo.
	#	Attend.	#	Attend.	#	Attend.			
1st Qtr	3	194	1	18	4	212	391	823	5,014
2nd Qtr	4	208	1	27	5	235	308	505	8,308
3rd Qtr	5	190	---	---	5	190	431	420	8,854
4th Qtr	3	115	---	---	3	115	260	379	11,622
FY99	15	707	2	45	17	752 (44 avg)	1390	-----	-----
% Change versus FY98						(22)	(48)	-----	-----

Newsletter: Discontinued prior newsletter; on-line columns

Table 2 – West Coast – FY99 Workshops/Events					
TECH, SOFT, INTERNET, Or OTHER	PTTC or Cosponsor	Topic (cosponsors)	Location	Date	Total Attend.
SOFT	PTTC	GeoGraphix Training	Los Angeles, CA	10/16/98	18
TECH	Cosponsor	OPEC Pricing & Independent Prod. (Webcast)	Los Angeles, CA	10/22/98	67
TECH	Cosponsor	Pipeline Integrity, Technology, Remedial Action	Ventura, CA	11/19-20	48
		Reservoir Management Showcase (Webcast)	Los Angeles, CA	12/11/98	79
		Managing Oilfield Under Adverse Economics	Bakersfield, CA	1/21/99	63
		Managing Oilfield Under Adverse Economics	Long Beach, CA	1/22/99	
TECH	Cosponsor	Water Cut Control	Long Beach, CA	2/25/99	
TECH	Cosponsor	Water Cut Control	Bakersfield, CA	2/26/99	
SOFT	Cosponsor	GeoQuest training (GeoQuest)	Bakersfield, CA	3/25/99	27
TECH	Cosponsor	Use of Well Logging in Reservoir Characterization and Management	Long Beach, CA	4/29/99	37
			Bakersfield	4/30/99	39
TECH	Cosponsor	Combustion for California Oilfields	Bakersfield, CA	5/17/99	43
TECH	Cosponsor	Coiled Tubing Operations & Safety Practices (Westport, DOE)	Bakersfield, CA	6/10/99	31
			Long Beach, CA	6/11/99	40
OTHER	Cosponsor	COMET 99	Los Angeles, CA	6/28-7/2	44
TECH	Cosponsor	3-D Seismic	Los Angeles, CA	7/08/99	41
TECH	Cosponsor	3-D Seismic	Bakersfield, CA	7/09/99	32
TECH	Cosponsor	Troubleshooters Forum	Bakersfield, CA	9/24/99	
Total FY99 Attendance (17 workshops, 64% of attendees from E&P industry)					

Regional Website: In October 1998, the region established a first for PTTC—webcasting the “OPEC Pricing & Independent Producer” workshop. With webcasting, real-time video and audio signal are broadcast on the Internet. Remote viewers across the world can watch speakers almost as if they were there. For this initial effort, remote viewers could post questions via email, which were then handed to the speaker. Videos from this and some following workshops were later archived on the website. The video archive allows users to choose when they want to watch, but it does preclude interactive questioning. The region noted an increase in website traffic after the video archive was established. Val’s Tech Talk, a regular column that summarizes content in recent workshops, is another regular feature of the website.

Workshops/Events: Overall workshop attendance decreased by just over 20%, which is not statistically significant, considering the dire economic straits that most California operators endured throughout much of

1999. In most cases, workshops are repeated both in the Los Angeles and Bakersfield areas. Workshop evaluation forms included the key question: "Have you used any new technologies based on knowledge gained through PTTC?" For those who responded, 43% indicated "Yes."

The region responded rapidly to PTTC's Industry Crisis Action Plan, holding workshops in Bakersfield and Long Beach by late January. Other topics covered the spectrum from pipeline safety to water cut control to reservoir characterization (3-D seismic) to improved oil recovery (in situ combustion). The region also coordinated with Headquarters to support a Westport Technology/DOE workshop on "Coiled Tubing Operations and Safety Practices," held in both Bakersfield and Long Beach.

Resource Center: Resource center activity consists of two primary activities—responding to inquiries and performing some of the preliminary analyses for the Trouble Shooters effort (see outreach).

Outreach/Contacts: In FY99, staff modified their process for reporting contacts to achieve greater consistency among the regions. Although contacts were probably down some, the indicated 48% decrease is believed to be as much a factor of the reporting process as an actual decrease in contacts.

The winter issue of the regional newsletter was distributed to 3000 people, 70% from industry, in November 1998. No issues were distributed in 1999 due to budget concerns. Although Val's Tech Talk, a regular column on the website, serves an on-line newsletter function, it does not fulfill the hardcopy printed information still desired by a portion of PTTC's audience. The PAG and RLO are reevaluating how to accomplish the newsletter function.

For the Trouble Shooters effort, staff selected fields based on potential remaining oil, performed a preliminary study using public data, then contacted operators in those fields with insights from the brief examination of public data. Through March 1999, about 20 companies were contacted by phone, and visits to discuss their situations individually were actually made with five companies. During the visits, operators were informed of opportunities within DOE's "Technology Development with Independents" program. Several operators are known to have submitted proposals, and some won awards.

COMET '99, USC's program for stimulating interest in the petroleum industry, was held during the summer. The COMET program provides a couple weeks on-campus training in the petroleum geosciences to students and selected teachers. Students then complete a one-month internship working for industry. 41 students and four science teachers participated in COMET '99. Industry has strongly supported the program since its inception a couple years ago. Since technology transfer to independents occurs only indirectly, PTTC support for COMET has been nominal.

Problem Identification: Beyond input from the Producer Advisory Group, the region relies primarily on feedback from workshop participants and insight from contacts/inquiries with producers to determine what topics are of highest interest. As independents operate more and more of California's larger, very mature fields, staff are receiving more requests related to characterization and mapping of by-passed oil—a factor considered in developing topics for FY00. There is also strong PAG sentiment that additional low-tech, operations-oriented activities are needed.

Case Studies: Staff strive to incorporate field-oriented case studies in each workshop. In the Anniversary Forum, held each December at USC, three reservoir management case studies were presented. Those presentations are part of the video archive now on the website. Another case study from the coiled tubing workshops, comparing costs for different oilfield operations using coiled tubing versus conventional operations, was of high interest to area producers.

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Petroleum Technology Transfer Council

Board of Directors

OFFICERS:

Chair	Leo A. Schrider	Belden & Blake Corp.	North Canton, OH
Vice Chair	Wm. Clark Southmayd, Jr.	Oneok Resources Co.	Tulsa, OK
Immed. Past Chair	Robert L. Nance	Nance Petroleum Corp.	Billings, MT
Exec. Director & Sec/Treas (non-voting)	Deborah Rowell	PTTC	Washington, DC

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

DIRECTORS
REPRESENTING:

Term expires
Dec. 31st of:

REGIONS:

Appalachian	Kevin Smith	Oxford Oil Company	Zanesville, OH	2001
Central Gulf	Don Solanas	Arrowhead Exploration	Baton Rouge, LA	2002
Eastern Gulf	Brian Sims	Independent	Madison, MS	2000
Midwest	Lester Moore	MEPCO, Inc.	Evansville, IN	2000
Rocky Mountain	Brook Phifer	NiCo Oil & Gas, LLC	Littleton, CO	2001
Southwest	David Boneau	Yates Petroleum Corp.	Artesia, NM	2001
North Midcontinent	James Daniels	Murfin Drilling Co., Inc.	Wichita, KS	2001
South Midcontinent	James Bruning	Freedom Energy Inc.	Fort Smith, AR	2001
Texas	Larry Hulsey	Independent	Graham, TX	2000
West Coast	J.C. "Chris" Hall	Drilling & Production Co.	Torrance, CA	2000
Regional Lead Orgs. (non-voting)	Charles Mankin	OK Geological Survey	Norman, OK	2000

ORGANIZATIONS:

Indep. Petrol. Assoc. Of America	Gil Thurm	IPAA	Washington, DC	
Interstate Oil & Gas Compact Comm.	John T. King	MI Public Service Comm.	Lansing, MI	
American Assoc. of Pet. Geologists	P. "Connie" Hudson	Consulting Geologist	Mt. Pleasant, TX	1999
Society of Explor. Geophysicists	Glenn Breed	The Information Store	Houston, TX	2000
Society of Petroleum Engineers	Michael Gatens, III	MGV Energy, Inc.	Calgary, Canada	2002
Gas Research Institute	Charles Brandenburg	GRI	Chicago, IL	2001

INDUSTRY SECTORS:

Service Cos.	Jay Haskell	Schlumberger Oil Field Svcs.	Caracas, Venez.	2000
Major E&P Cos.	Greg Reep	Texaco Upstream Technology	Houston, TX	2002

Alternate Directors

Representing:

Appalachian	David Wozniak	Belden & Blake Corp.	North Canton, OH
Central Gulf	Joe Jacobs	Gas Masters of America, Inc.	Monroe, LA
Eastern Gulf	Robert Schneeflock	Paramount Petroleum Co.	Jackson, MS
Midwest	Craig Howard	Howard Energy Corp.	Mount Carmel, 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	Dan Richmond	SMC Development Group	Tulsa, OK
Texas	Gene Ames III	Venus Exploration Co.	San Antonio, TX
West Coast	Mark Kapelke	Tidelands Oil Production Co.	Long Beach, CA
Regional Lead Orgs.	Roger Slatt	CO School of Mines	Golden, CO
IPAA	Scott Espenshade	Indep. Pet. Assoc. of America	Washington, DC
IOGCC	Tom Richmond	Montana Board of Oil & Gas	Billings, MT
AAPG	Robert Hulse	Map Production Co.	Tyler, TX
SEG	Robert Graebner	The Information Store	Houston, TX
SPE	Arlie Skov	Consultant	Santa Barbara, CA
GRI	Kent Perry	Gas Research Institute	Chicago, IL
Service Cos.	William Preeg	Schlumberger Austin Research	Austin, TX
Major E&P Cos.	Larry Risley	Texaco, Inc.	Houston, TX

Management & Budget (M&B) Committee

Position:

M&B Committee Chair, and Board Vice Chair	Wm. Clark Southmayd, Jr.	Tulsa, OK
M&B Committee Vice Chair	James Bruning	Forth Smith, AR
Current Board Chair	Leo A. Schrider	North Canton, OH
Immediate Past Board Chair	Robert L. Nance	Billings, MT
M&B Committee Member	Michael Gatens III	Calgary, Alberta
Executive Director (ex-officio, non-voting)	Deborah Rowell	Washington, DC

Nominating Committee

Position:

Current Board Chair	Leo A. Schrider	North Canton, OH
Immediate Past Board Chair	Robert L. Nance	Billings, MT
IPAA Representative	Gil Thurm	Washington, DC
PAG Chair	Lester Moore	Evansville, IN
PAG Chair	James Bruning	Forth Smith, AR

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 judgement, 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."

I. 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.

II. 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 a 5 ½ 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 helping 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. Based on these outcomes,

PTTC is the independent petroleum industry's

"Bridge to Solutions"

PTTC is primarily funded by the U.S. Department of Energy, Office of Fossil Energy

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 1994, 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.