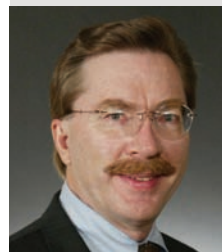


## Fueling the Future

Arnis Judzis, SPE, Vice President TerraTek, Data & Consulting Services, Schlumberger



*Arnis Judzis, SPE, is Vice President TerraTek, Data & Consulting Services, Schlumberger. In this role, he leads business development for worldwide operations. Judzis joined TerraTek in 1999 and was Executive Vice President when Schlumberger acquired TerraTek in 2006. Previously, he held various management and technical positions for British Petroleum after its acquisition of Standard Oil of Ohio.*

*Judzis has played active roles in SPE, American Institute of Chemical Engineers, with the Offshore Technology Conference (OTC), and the Drilling Engineering Association for more than 25 years. He serves on the Board of Directors for OTC and was Chairman during 2006 and 2007. He currently is serving on the SPE R&D Advisory and Distinguished Lecturer Committees. Judzis received a BS in chemical engineering from Cornell University and master's and PhD degrees in chemical engineering from the University of Michigan.*

As a member of the SPE Research and Development (R&D) Advisory Committee, I see numerous colleagues and organizations in the oil and gas industry articulating research needs to meet the challenges of increasing reserves, drilling faster, optimizing production, and more. Some focus on longer-term R&D and consider using technologies normally thought to be outside the upstream exploration and production business. For the SPE R&D Advisory Committee, identifying these challenges is important, as one of the committee's objectives is to encourage R&D and to match providers with users. This is not an easy task to accomplish, and it is even more difficult to measure performance. One solution is to provide a forum where both R&D providers and practitioners can speak and join in the discussion on how to "fuel the future."

To this end, SPE will hold its second R&D Conference during 3–4 March 2009 in Lisbon, Portugal, with the theme of "Fueling the Future." The conference follows the first R&D Conference held in San Antonio, Texas in 2007. The first conference brought together attendees from operators, service companies, academia, and a broad spectrum of other organizations to identify and discuss the R&D challenges facing the industry as it seeks to find and produce the next trillion barrels. The second R&D Conference will focus on research areas thought to have significant potential to make material changes in recovery, productivity, and other metrics. One highlighted topic will be "Unlocking the Molecules," which may sound rather chemistry-oriented but is indeed a prominent topic in our industry. I invite you and your colleagues to join us for the second SPE R&D Conference. More details on the conference can be found at [www.spe.org/events/rdc](http://www.spe.org/events/rdc).

Another way the R&D Advisory Committee has raised awareness of R&D challenges in our industry is through articles in *JPT*. Several series addressing R&D have been featured over the past few years. I had the pleasure of coordinating a series related to R&D challenges in each of the SPE disciplines, including Production and Operations; Projects, Facilities, and Construction; and Management and Information. Industry leaders in each discipline compiled an exceptional set of issues and challenges to address to ensure that the next trillion barrels of oil will be produced. Some of those challenges included reserves estimation, one-trip well concepts, multiphase flow, stranded gas, and controlling discharges to minimize environmental impact. Research on some of these topics is well documented in SPE journals and conference proceedings.

This year there are some new trends in R&D. Some of my colleagues on the R&D Advisory Committee now list nanotechnology, hydrates, harnessing microbiological technologies, and immature shales in their top 10 wish list of R&D projects. The makeup of our energy sources may indeed be changing. In 2007, the US National Petroleum Council Committee on Oil and Gas released a report titled "Facing the Hard Truths About Energy" that detailed the need to expand and diversify energy supplies, a clear indication that things are changing. The articles from all the *JPT* series on R&D, and the R&D Advisory Committee's white paper, "The Challenges to Secure Energy Supply for the Third Trillion Barrels and Beyond," are available at [www.spe.org/sites/rd](http://www.spe.org/sites/rd).

The R&D Advisory Committee encourages various initiatives for the R&D community to participate in. Two new important ones include providing energy

(Contd. on page 83)

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education information for nonpetroleum engineers and the creation of the SPE R&D Technical Section.

The R&D Advisory Committee recognizes that the big challenges facing the industry will require the best and brightest minds to conquer. For this reason, encouraging more people to enter our industry and encouraging interest in R&D challenges in basic sciences outside the industry are included in the committee's goals. Among the proposals being considered by the committee are working with the SPE Energy Information Committee to expand information on the high-tech R&D aspects of the industry on [energy4me.org](http://energy4me.org), SPE's energy education website for students and teachers, and establishing a program to send speakers from our industry to university science departments to talk about our R&D challenges.

The R&D Technical Section provides a community for users and providers of R&D. The community is predominantly virtual, operating through online community software, but also meets annually at the SPE Annual Technical Conference and Exhibition. Among its goals are to encourage the development of a cooperative framework for R&D, encourage communication among members of the R&D community in various disciplines, and identify major issues on which to focus interaction and discussion.

I encourage you to participate in the upcoming SPE R&D Conference during 3–4 March in Lisbon. **JPT**

In 2002, an R&D Task Force recommended to the SPE Board of Directors that an R&D Advisory Committee “identify, encourage, facilitate, and help global R&D activities that will provide needed technology for future use of petroleum engineers.” The mission of this committee is “to encourage and facilitate global R&D activities by establishing (1) an ongoing dialog between industry, government, and academia that will match industry needs with research efforts; (2) a cooperative framework for development of technology and a competent workforce for the future E&P industry; and (3) R&D efforts that satisfy the needs of industry, governments, and academia in meeting their goals for success.” In 2006, the committee became permanent and reports to the Board Committee on Education and Professional Activities.

Committee members are Chairperson Vikram Rao, Kate Baker, Chris Buckingham, Ken Brown, Paul Ching, Turgay Ertekin, Richard Felder, Dan Georgi, Arnis Judzis, Med Kamal, Mike Sheppard, Pacelli Zitha, and David Zornes.

## TECHNOLOGY APPLICATIONS (Contd. from page 23)



**Fig 8—Fern Communications' FRX-1 ATEX radio repeater.**

E&P disciplines across domain processes. It connects solutions through data-rich models and advanced geosciences technology, and it covers survey and repository boundaries for all domains across distributed-data models and third-party data. E&P teams can improve reservoir-property models through continuous correlation, calibration, and correction, refining and expanding the asset-knowledge base.

For additional information, email [info@pdgm.com](mailto:info@pdgm.com).

**Bending Radio Signals**—Fern Communications announced that its FRX-1 ATEX Portable Radio Repeater provided uninterrupted radio communications for Qserv crews while onboard the *Seawell*, a riserless-well-intervention vessel used to carry out wireline, coiled-tubing, and pumping operations in the North Sea. The radio repeater was positioned on the *Seawell* between two points where no radio communication had been possible because

of the ship's construction (**Fig. 8**). Following a 3-week testing period on the *Seawell*, Qserv reported that the two units greatly enhanced the quality and consistency of radio communications. Standard radio systems are extremely vulnerable to “black spots” such as solid structures that make up the platform and that block radio signals. The radio repeater effectively bends the radio signal around a solid structure so that it reaches its target destination. The system is approved for use by the European Union in hazardous Zones 1 and 2 and gas group 11C, and is temperature rated to T6. The portable system operates on marine frequencies, VHF, and UHF and is fully compatible with existing radio-communications systems currently in use offshore. The system's high-capacity lithium-ion battery can operate for more than 18 hours before it must be charged. **JPT**

For additional information, email [sales@ferncom.com](mailto:sales@ferncom.com).