

## **Society of Petroleum Engineers: Why a Universal Language for Evaluating Reserves Is Needed**

Recent press coverage has implied that the Society of Petroleum Engineers' reserves definitions are less strict, and therefore more favorable to the oil and gas industry, than the definitions used by the US Securities and Exchange Commission (SEC) since 1978. Clearly, this is not the case.

SPE has been a leader in developing and maintaining technical petroleum reserves and resources definitions that provide a common language for estimating and classifying into three categories of technical uncertainty the quantities of oil and gas that have been discovered in a reservoir, but not yet produced. The only category of reserves recognized by the SEC is proved reserves – that being the quantity of petroleum that can be estimated to a level of “reasonable certainty.”

By nature, the process for estimating reserves is complex, requiring both scientific methodologies and expert interpretations. Yet, investors, regulators, governments and consumers all require a reliable estimate of petroleum reserves for determining the outlook for the world's energy supply as well as for the consistent assessment of one measure of the value of individual companies. In the absence of a comprehensive and current code, individual countries and companies are using their own reserves evaluation systems, making global comparisons difficult.

A set of universal standards with common definitions is needed that can be consistently used in estimating reserves by international financial, regulatory, and reporting bodies, as well as by the oil and gas industry. The foundation for this standard is SPE's reserves definitions.

An agreement on a common language will benefit all stakeholders:

- greater consistency and comparability in reserves reports from company to company, and country to country
- greater transparency in how reserves estimates were calculated
- more reliable estimates that are based on standards that consider widely-adopted technological advances and a consensus on best practices

## **SPE's History and Credentials in Developing Reserves Definitions**

The Society of Petroleum Engineers (SPE) is a global not-for-profit professional association with almost 70,000 members dedicated to the exchange of technical knowledge about oil and gas resources for the public benefit. As a non-political and

non-commercial organization, SPE is a recognized resource worldwide for scientific and technical expertise.

As a technical society, SPE does not lobby government agencies or campaign for regulatory changes. SPE's role is in leading the development of a technical standard, the reserves definitions. To develop and update the technical reserves definitions, SPE brings together the best and most experienced minds in the world to reach a consensus on best practices. Since publishing its reserves definitions jointly with the World Petroleum Council in 1997, SPE has been continuously engaged in assessing the definitions again for a possible update.

### **Key Technical Points: Why SPE's Current Definitions Are More Reliable than Other Definitions**

The existing definition set, including Proved Reserves, has been revisited on several occasions by the SPE since 1978, the vintage of the current SEC proved reserve definitions, including a comprehensive ongoing review. The existing proved reserves definition was created in 1997, building on 1981 and 1987 revisions the SPE made to its 1964 proved definition, with a subsequent review of the complete resource system in the 2000 timeframe. These reviews help ensure the existing set continually reflects existing technology and operating conditions, thereby providing an opportunity for more reliable and dependable disclosure to the investor. Several points in particular are noted.

- 1) Application of a 90% probability to proved reserves. The SPE system provides that when proved reserves are estimated using probabilistic methodologies, that there is at least a 90% probability that the estimated quantity will be recovered. In addition to the fact that the development and recognition of probabilistic methodologies acts as a check against the more traditional reliance upon deterministic methods, it quantifies at a high level the expected confidence associated with proved reserve volumes...something still not accepted by the SEC, which in fact some may argue can be viewed as a more onerous measure than "reasonable certainty" in and of itself.
- 2) Recognition of new technologies. The pace of technological development since the development of the 1978 SEC definition set has provided a much-enhanced set of reliable reservoir evaluation technologies. These technologies can help address some of the uncertainties that were inherent in 1978, thereby providing the investor with a much more reliable disclosure of recoverable volumes. A prime example is the use of pressure-gradient measurement tools to provide data

to pinpoint fluid contacts not directly observed in well-bores. This technique was made possible only after 1978 through the development of highly reliable pressure measuring devices

- 3) Recognition of evolving financial and economic conditions. The 1978 set of definitions was written at a time when the majority of publicly owned companies were headquartered in the United States. Natural gas was sold through long-term contract with defined pricing, and crude oil was marketed through refinery postings. The current volatility in oil prices is a result of the development of a spot market unknown in 1978. Since that time, the majority of proved reserves owned or controlled by publicly-owned companies are now located in countries outside the United States, where regimes are governed by the application of contracts such as Production Sharing Contracts (PSC). Wide swings of proved reserve estimates may be, and often are, required, with the application of specified year-end pricing. This volatility in quantities is confusing to the investor, whereas the SPE's use of an average pricing period provides greater disclosure clarity by helping to eliminate these swings in volumes.