

**Trans-Pecos SPE Meeting – Distinguished Lecturer
Wednesday, March 10th, 11:30am
Odessa Country Club, #1 Fairway Drive, Odessa, TX
Meeting Cost: \$20
Lunch is provided**

2009-2010 SPE Distinguished Lecturer

Ways To Reduce Successfully Well Blowouts

Otto Luiz Alcantara Santos, Petrobras

The objective of this presentation is to show important aspects of well control safety that have been conducted in Brazil by Petrobras that result in an almost ten-year period without a blowout. This has been done adopting the following actions: training and certificating the personnel in well control, monitoring operational activities, elaborating standards and operational procedures, and doing research.

The first line of action to be addressed is the training and certification program. The important aspects and results of the well control certification program in effect in Brazil are shown. Since its creation in 1996, the program has already issued more than 5500 WellCAP certificates, the certification program adopted in Brazil. Following, the presentation shows operational actions that were implemented in the field, such as annual inspections of well control equipment, monitoring of the well control equipment tests for function and pressure, and monitoring of the kick detection equipment tests. The most important well control standards and operational procedures recently elaborated, especially those related to deepwater situations, are also commented.

The last part of the presentation focuses on research and development projects that have been conducted in Brazil on well safety, especially in deepwater. Thus, the operational difficulties and technological challenges for drilling and producing safely in deep and ultra deep waters are presented. The research projects dealing with these operational difficulties conducted recently in Brazil are presented and discussed. These deepwater projects include the development of a kick simulator, the study of drilling hydraulic and kick control using an actual drillship, the study of gas solubility in synthetic oil based drilling fluids, and blowout control considerations.

The most important aspect of presentation is to show how a major oil company can act to preserve its personnel, assets, and image from the consequences of a well blowout.



Otto Alcantara Santos has been a civil engineer from the Universidad Federal da Bahia since 1976. After joined PETROBRAS in 1976, he successfully completed his post-graduate degree in petroleum engineering in 1977 at PETROBRAS University. In 1982, he earned a master's degree at Colorado School of Mines and in 1989 his received a doctoral degree at Louisiana State University, both in petroleum engineering. In 1994, he participated as a visiting professor at the University of Tulsa in a post-doctoral assignment. Currently, he is the coordinator of the Well Construction Area of PETROBRAS University, the coordinator of Well Control Training and Certification Program of PETROBRAS, instructor of drilling technologies at PETROBRAS UniversityY and Senior Technical Advisor of PETROBRAS. He wrote many technical papers in drilling technology especially on well control and directional drilling, and he is co-author of the book "Directional Drilling". He has been an SPE member since 1982, and currently he is the Program Chairperson of Bahia/Sergipe SPE Section and a technical reviewer of *SPE Drilling & Completion Journal*.