

# Petrobras celebrates 10th WellCAP anniversary, 85% decrease in cumulative blowout rates

TEN YEARS AGO, in July 1996, Petrobras became the first operator to achieve accreditation in IADC's Well Control Accreditation (WellCAP) program. It also became the first WellCAP training provider in the region. Since then, the company's cumulative blowout rate per 1,000 wells drilled has dropped from nearly 3.25 to 0.5, an 85% improvement. In fact, in that time period, Petrobras has experienced only 2 minor blowouts in drilling operations.

"We're very proud of the achievement, and the results of the WellCAP program in reducing the number of blowouts are evident," said **Otto Santos**, coordinator of the Well Construction Training Program at Petrobras University. The facility operates under full IADC accreditation for surface stack and surface/subsea instruction for drilling. Courses are provided in Portuguese at 8 facilities in Brazil.

"Well control training was instrumental in reducing the number of blowouts in Brazil and the rate of blowouts per 1,000 drilled wells," Dr Santos said. He noted that this reduction is also a result of preventive actions taken by Petrobras, such as well safety inspections, well control equipment tests, elaboration of well safety procedures and regulations, and research and development.

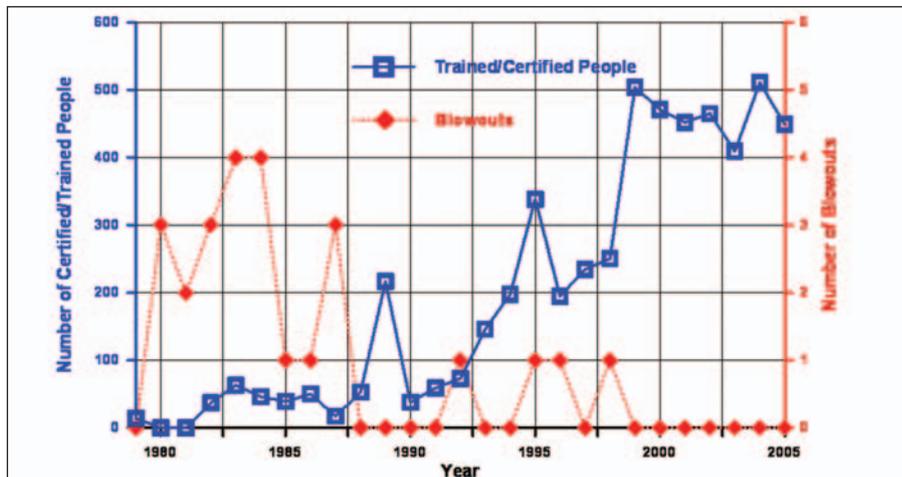
In celebration, Petrobras marked the 10th anniversary of its WellCAP accreditation with a Rio de Janeiro gala in July. About 120 senior drilling management and engineers were invited. **Steve Kropla**, IADC director of accreditation and certification, attended to present a commemorative plaque to **Diego Hernandez**, Petrobras executive manager of human resources.

From 1979 to 1992, Petrobras provided well control training to only 706 people, Dr Santos said. In 1993, the company established its own certification system, drastically increasing the number of workers trained per year. From January 1993 to July 1996, 770 Petrobras well control certificates were issued.

Then, in July 1996, Petrobras adopted IADC's WellCAP as its well control certification system. In the 10 years following, it issued a total of 4,026 WellCAP certificates, with more than 1,800 of those at the supervisory level.



Using simulators, such as this rig floor simulator installed at the Taquipe Training Center, to train students in the Well Control Training and Certification Program, Petrobras has issued more than 4,000 WellCAP certificates since 1996.



The above graph shows that as the number of trained/certified personnel increased, the number of blowouts has dramatically decreased. Petrobras' cumulative blowout rate per 1,000 wells has dropped from nearly 3.25 to 0.5.

## TRAINING & CERTIFICATION

Petrobras' Well Control Training and Certification Program considers 3 levels of certification in the drilling category:

- Supervisory level – required for the Petrobras representative on the rig (company man), mud engineer, rig superintendent and toolpusher. The certification is granted when an individual successfully completes a 40-hour course

in well control principles, practices and equipment. To successfully complete the course, the professional must score a minimum of 70% on the written exam, attend at least 90% of the total course time and score a minimum of 70% on the simulator test. The certification is provided in 2 options, surface or subsea stack, and is valid for 2 years.

- Fundamental level – required for driller and assistant driller. This carries the

same requirements, validity and options as those of the supervisory level.

- Introductory level – recommended for derrickman and floorhand. To obtain the certification, the candidate must pass a 24-hour course in well control principles, practices and equipment and attend at least 20 hours. The certification is also provided in the 2 stack options and is valid for 5 years.

Currently, the system has 7 instructors for well control principles/practices and 4 instructors for well control equipment. Four instructors also provide lectures on well control in workover operations, held nationwide in Brazil using 5 kick simulators: a DRILLSIM 50 portable simulator from drilling systems installed in Macaé, 3 DPWS-22UL portable simulators for drilling and completion that rotate through the Petrobras E&P business units, and 1 rig floor drilling simulator installed in the Taquipe Training Center.

## IMPROVEMENTS

According to Dr Santos, Petrobras University has been working on implementing several new projects this year

to further improve its training program. First, it plans to achieve WellCAP accreditation in the workover category, which would include no less than 32 hours of instruction.

Second, it will be implementing software to allow all Petrobras managers to easily access well control training information such as certificate status and training statistical data.

Third, it will put into its well control classes a software to provide students with a kick simulator, a calculator of well control functions and kill sheets. This proprietary software was jointly developed by Petrobras and the State University of Campinas (Unicamp).

The school has been cooperating with Petrobras on research in deepwater well control as well, Dr Santos noted. “We’re doing a lot of research in this area so we can elaborate on well control standards and operational procedures for this type of drilling,” he said. Some of the research projects address well control and drilling hydraulics, ultra deepwater kicks and blowouts and gas solubility in synthetic oil muds.



**Steve Kropla (left), IADC director of accreditation and certification, presents a plaque to Diego Hernandes, Petrobras executive manager of human resources, in July. The plaque was in commemoration of the 10th anniversary of Petrobras' WellCAP accreditation.**

All 3 of these well control initiatives are expected to be completed by year's end. To learn more about Petrobras' well control training, go online to [www2.petrobras.com.br/ingles/index.asp](http://www2.petrobras.com.br/ingles/index.asp). 