

Company Description

Perenco is an aggressive independent petroleum, exploration and production company that successfully buys and produces smaller assets, returning a higher yield to its shareholders. Perenco operates in Cameroon, Columbia, Congo, Democratic Republic of Congo, Egypt, Eritrea, Gabon, Guatemala, Ecuador, Tunisia, Turkey, UK, and Venezuela. The current production of the company is 290,000 barrels of oil equivalent per day (boepd), with over 210,000 boepd net to the Perenco Group, and an estimated 520 million barrels of oil equivalent (mmbœ) of reserves.

The Perenco Model

Early development of Perenco relied on the acquisition of mature fields. Detailed scrutiny of operating costs by managers who have a fresh approach and a strong ownership incentive have produced remarkable production efficiency improvements and cost reductions. These results corresponded with improved HSE standards and longer field life expectations. Improved field economics and longer prospective field life have justified progressive investment opportunities.

The Challenge

Perenco wanted to control the cost of drilling and the availability of tools by purchasing and implementing its own internal directional drilling services. These services could be used to develop new, more remote oil reserves that were previously unreachable by vertical wells. GE Energy was called to evaluate, make recommendations and provide Perenco with all the necessary tools and training for its drilling crew, supervisors and maintenance operators.

The Solution

Under Gildas Collin's responsibility (Subsurface Engineer, +33 1 5357 6600, gcollin@fr.perenco.com), Perenco purchased its first set of MWD tools in January 2005, using the systems to drill three deviated wells in September 2005. After a highly successful campaign, the wells were completed and put into production in

October 2005. The company also drilled four more deviated wells on the same field in December 2005. There was a 50% production increase compared with the wells drilled previously. The success of this directional campaign was largely linked to the reliability and ease of use of GE Energy's MWD systems maintained and repaired on location as trained by GE—which included a comprehensive list of spare parts, extensive training and the right technical support to get the most out of this proven technology.

Specialized Training

GE Energy's exploration and production training is designed to help maximize the performance of the directional drilling formation evaluation system. Training is offered in scheduled classes, or at the customer's facility or well site. The training form at can include classroom, hands-on laboratory sessions and on-the-job training. Experienced instructors who have many years of practical field, shop and design experience provide the training.

Features and Benefits

Efficient—GE Energy's MWD system is designed for easy and efficient transportation to the job-site. The system's modular design provides MWD services in a single, flexible system with a variety of collar diameters—from 3.5" to 9.5" and in flow ranges from 75 to 1200 gpm.

Economical—The rugged retrievable and reinsertable design reduces financial risk associated with "lost in hole" conditions. GE Energy's training and customer support programs get your experienced staff up to speed quickly with customized training and maintenance courses.

Short Radius Applications—The unique design of the MWD systems results in significant system flexibility, allowing the down hole probe to operate in short-radius drilling operations. The system has been utilized in radii as short as 80 degrees per 100 feet.

Positive Pulse—Through positive pulses, down hole life and servicing is greatly simplified throughout production using minimal moving parts.

Safe Area System—The color graphics LCD screen of the newly updated Rig Floor Display is easily viewed in normal rig operating conditions.



Software Supported by Windows-Based Operating System –

GE Energy's MWD system runs software on the MS Windows® 2000 operating system.

The MWD system includes options to allow for the easy addition of GE Energy's Centerfire resistivity and gamma ray system, down hole memory and hardcopy logs.



Performance Benefits

- Reliable
- Long down hole life, low maintenance
- Positive-pulse
- Operates down hole to 175°C and 20,000 psi
- Efficient receiver and decoding system prevents "hand decoding"
- Simple transport and assembly due to modular design
- Long battery life, low power consumption
- Adaptable tool configuration and programming flexibility
- Easy to configure monitoring screen
- Downlinking capability for selecting tool operating mode, without tripping



Technical Specifications

The optimized performance of a drilling system depends on the quality, sensitivity and accuracy of its sensors and modules.

Join the many GE Energy customers around the globe that have achieved outstanding drilling results.

Specifications

Temperature	<ul style="list-style-type: none">• 0°C to 175°C continuous within specifications• -40°C to 200°C survival
Shock	<ul style="list-style-type: none">• 900 g peak, 0.5ms halfsine (-40°C - 70°C)• 700 g peak, 0.5ms halfsine (70°C - 185°C)
Vibration	<ul style="list-style-type: none">• 30 g sine sweep 50 - 2000 Hz (-40 - 185°C)• 20 g RMS 5 - 1000 Hz, 0.4g²/Hz
Power Requirements	<ul style="list-style-type: none">• +/- 15vdc nominal @ 70ma max• +/- (12 - 18 vdc) min/max
Warm-Up Time	Operate to specifications within 2 seconds after power up
Electrical Isolation	> 20 megohms



For more information, contact:

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