01 SEPTEMBER10

SKEMA**TODAY**

SKEMA'S
LATEST NEWS
PROJECTS
AND MORE

INFO&FAIRS

SPOTLIGHT: **OTC** / HOUSTON / USA

The Offshore Technology Conference, held annually in Houston during the first week of May, gives companies in the various sub-sectors of the oil industry the opportunity to boost their visibility and strike new business deals. As in previous years, Skema participated in the 2010 OTC in Houston, Texas, from May 3 to 6, together with over 2400 exhibitors hailing from 35 countries. Skema personnel from both Milan and Houston manned the Skema stand and made themselves available to demonstrate the features of the Intelligent Motor Control Centre and the IPCS system, and also to discuss Skema's Local Equipment Rooms and MV/LV Packaged Substations.

AOG 2010 / PERTH / AUSTRALIA
2010 / MARCH 24-26
STAND K30

ATYRAU OIL & GAS / ATYRAU / KAZAKHSTAN
2010 / APRIL 6-8
STAND 69

HANOVER MESSE 2010 / HANOVER / GERMANY
2010 / APRIL 19-23
PAD. 11 - STAND B46

OTC / HOUSTON / USA
2010 / MAY 3-6
RELIANT CENTER/ HALL B / STAND 4453

NEFTEGAS 2010 / MOSCOW / RUSSIA
2010 / JUNE 21-25
PAVILLON 2 / STAND 21B12

KIOGE 2010 / ALMATY / KAZAKHSTAN
2010 / OCTOBER 6-9

ADIPEC 2010 / ABU DHABI / UAE
2010 / NOVEMBER 1-4
ENTRANCE 1-3 / STAND 02030

OMC 2011 / RAVENNA / ITALY
2011 / MARCH 23-25

NEWSFLASH

- SKEMA, TOGETHER WITH ITS RUSSIAN PARTNER ETM- ROSENERGOSYSTEM, HAS BEEN APPOINTED TO SUPPLY POWER CENTRES AND MOTOR CONTROL CENTRES FOR THE NIZHNEKAMSK REFINERY, IN THE REPUBLIC OF TATARSTAN, RUSSIA. NIZHNEKAMSK IS THE LARGEST REFINERY IN RUSSIA, AND THIS IS ONE OF THE MOST AMBITIOUS PROJECTS CURRENTLY UNDER WAY IN THE OIL & GAS INDUSTRY.

- THE KAZAKH PRIME MINISTER RECENTLY VISITED THE OPPB YARD IN ATYRAU, KAZAKHSTAN. OPPB IS THE KAZAKH COMPANY JOINTLY OWNED BY SKEMA ITALY (THROUGH ITS IN-COUNTRY SUBSIDIARY SKEMA LLP) AND ONE OF THE MAJOR LOCAL INDUSTRIAL GROUP, ISKER CONSORTIUM. IN THE YARD ON THE URAL RIVER IN ATYRAU, OPPB IS FABRICATING 12 PROCESS AND UTILITIES BUILDINGS FOR THE KASHAGAN EXPERIMENTAL PROGRAMME-OFFSHORE.

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Why SKEMA**TODAY**

Skema has consistently evolved over the past fifteen years in terms of our global expansion, in terms of the development of our experience in engineering and constructing local equipment rooms and modules, and in terms of our capability to enhance, on an ongoing basis, the quality and flexibility of our switchgear solutions.

Dear All,
Welcome to the first edition of Skema Today.
I am very glad to keep you posted on some of the most interesting news concerning the day-to-day life of our business. The aim of this newsletter is to provide a more direct form of communication with our clients, partners, international employees, agents and suppliers – in short, with everyone who, by working with Skema, is helping us to deliver our value proposition to the very best of our ability.

Skema has consistently evolved over the past fifteen years in terms of our global expansion, in terms of the development of our experience in engineering and constructing local equipment rooms and modules, and in terms of our capability to enhance, on an ongoing basis, the quality and flexibility of our switchgear solutions. The delocalisation of our operations in Kazakhstan and our history of encouraging "local content" are the clearest examples of the international approach we take to the work we do.

Looking to the future, I would like to point out that the approach implemented day in, day out by our management team is based on our commitment to taking on ambitious challenges, to remaining at the forefront of our industry and to supplying our clients with more customised and flexible solutions than that offered by the larger players operating in our industry.

I hope you enjoy reading the newsletter as much as we have enjoyed putting it together!

Best wishes,
Elisabetta Cerveglieri
V.P. of Business Development

PROJECTS / **OGD III** / UAE

The $1.5 billion Onshore Gas Development (OGD) III Project involves the expansion of the production capacity of a massive gas-processing plant in Habshan, approximately 130 kilometers south-west of Abu Dhabi, in the United Arab Emirates. The Habshan complex is one of the largest gas-processing plants in the world. The expansion was designed to allow it to reach production levels of 125,000 barrels per day of condensate and 12,000 tons per day of LNG, including around 3,200 tons per day of ethane, and also to recycle an amount equal to the volume of gas produced each day back into the reservoir by means of a high-pressure gas injection system.

EPC CONTRACTOR
BECHTEL

END USER
GASCO

SKEMA WAS AWARDED
THE CONTRACT FOR THE SUPPLY OF TWENTY-ONE 415V SWITCHGEAR SYSTEMS/MCC'S, INCLUDING A TOTAL OF 377 COLUMNS AND 1571 WITHDRAWABLE UNITS, AS WELL AS THE INTEGRATED PROTECTION AND CONTROL SYSTEM (IPCS).

THE PRODUCTS SUPPLIED BY SKEMA are fully compliant with the most stringent requirements of the Oil and Gas industry, the internationally recognized Shell DEP: internal arc proof, IP 41 external protection, barriers provided in the assemblies to achieve Form 4 separation of compartments, IP 4X internal protection, IP 20 protection when a withdrawable unit has been removed from the assembly, secondary PVC-insulated 600/1000V grade wiring, stranded copper conductors (minimum size 2.5 mm^2), bus bar insulation 2kV AC 60 sec, distribution bus bars (droppers) fully segregated by insulated material and fully withdrawable contactor and starter units; withdrawable units which are mechanically identical but electrically different are not interchangeable.

"Particular gratitude is extended to Skema's personnel who have had involvement in the Project. I appreciate all aspects of Skema's performance, and in particular: Your team's efforts in turning around accurate engineering documentation in a timely fashion / Skema's pro-activeness in dealing with third parties / Skema's flexible and adaptable manufacturing approach to accommodate construction priorities / Skema's swift clear communication with the Project Team and the overall quality of Skema's work product. Skema's approach to the OGDIII Project has been most professional at all times and its high caliber performance has been noted."

Project Director


TEREX

SPECIAL **FOCUS**: **KASHAGAN** / Kazakhstan

KASHAGAN FIELD DEVELOPMENT EXPERIMENTAL PROGRAMME

FRAME AGREEMENT
MV/LV PACKAGED SUBSTATIONS
LOCAL EQUIPMENT ROOMS
PROCESS AND UTILITIES BUILDINGS

THE GIANT KASHAGAN

Kashagan, 80km south-east of Atyrau, in the North Caspian Sea, is the largest oil field discovered over the last thirty years worldwide and extends over a surface area of approximately 75km by 45km.

Its development represents one of the greatest challenges faced by the petroleum industry, given the deep, high-pressure reservoir, the high sulphur content, the shallow waters that freeze in winter and the marked shifts in temperature (from -30°C to +40°C).

The potential daily average production amounts to 1.2 million barrels, with estimated reserves of 38 billion barrels.

The Kashagan Project consists of two developments: Offshore Complex (artificial islands in the Caspian Sea) and Onshore Complex (Bolashak onshore processing facility).

SKEMA SUPPLIED LOCAL EQUIPMENT ROOMS, MV/LV COMPLETE PACKAGED SUBSTATIONS, ALL LV SWITCHGEARS/ INTELLIGENT POWER MOTOR CONTROL CENTERS, RTUs, LMS/DMS (ONSHORE) AND THE IPCS SYSTEM.

SKEMA, THROUGH ITS IN-COUNTRY SUBSIDIARY SKEMA LLP, IS ALSO WORKING WITH ONE OF THE MAJOR LOCAL INDUSTRIAL GROUP, ISKER CONSORTIUM, ON THE EPC CONTRACT FOR THE FABRICATION OF 12 PROCESS AND UTILITIES BUILDINGS. THE FABRICATION YARD IS LOCATED ON THE URAL RIVER IN ATYRAU.

END USER
AGIP KCO

A CONSORTIUM COMPRISING
CONOCOPHILLIPS - ENI - EXXONMOBIL - INPEX
KAZMUNAYGAZ - SHELL - TOTAL

- **190 km²** total area of onshore operations = the size of Amsterdam
- **120,000 tons** total weight of steel items and structures used = 1. 5 times the weight of the Golden Gate Bridge in San Francisco
- **510 km** total length of pipelines = almost the distance between New York and Montreal
- **5,000 km** total length of electric and instrumentation cables = about the distance between Almaty and Rome
- **50,000 m³** volume of concrete structures used = the size of the landmark 88-floor building of Petronas Towers in Kuala Lumpur, Malaysia

FRAME AGREEMENT

Onshore / Offshore

Skema was awarded the frame agreement for the provision of all intelligent LV Switchgear / Intelligent Power Motor Control Centers, RTUs, the Integrated Protection and Control System for both offshore and onshore facilities and LMS / DMS (onshore).

EPC CONTRACTORS

ABB PS&S - AKER KVAERNER - BATEMAN - CONSAFE - FORES - GE OIL & GAS NP GUSTOMSC - KAZSTROYSERVICE - LITWIN - MSS - PUNJI LLOYD - SAIPEM SBM - SIEMENS TURBOMACHINERY - ROSETTI MARINO - RENCO - TEKFEN - ZAFER

MV/LV PACKAGED SUBSTATIONS

Onshore

Skema was in charge of the engineering, manufacturing, testing and commissioning of 6 MV/LV Packaged Substations. The Substations feed the infrastructure utilities for the Kashagan field and are part of the Early Works of the Kashagan Experimental Programme.

EACH SUBSTATION WAS EQUIPPED WITH:

- 10 Kv Switchboards
- PMCC LV Switchboards
- Distribution boards
- Distribution transformers
- AC and DC UPS batteries
- Alarm and communication RTUs
- HVAC system
- Electrical Control System

"The products supplied by Skema were able to meet the strict technical standards of the job. Skema's project team showed competent technical skills and the ability to work and support us at all staged of the project from engineering to commissioning".

Project Electrical and Instrumentation Engineer

LOCAL EQUIPMENT ROOMS

Offshore

Skema was awarded in joint venture the EPC Contract for the provision of 11 Local Equipment Rooms (LERs).

The scope of work includes the coordination and monitoring of every aspect of the project, from feasibility studies and cost/performance optimization to the design of structural, electrical, HVAC and safety systems, procurement, construction, assembly, commissioning, final inspection and supervision of on-site installation.

The LERs are pre-fabricated steel-structure modules (measuring on average 8.3m in height, 15.3m in width and 44m in length), which have the following systems installed: medium and low voltage switchboards, transformers, distribution switchboards, UPSs and relevant batteries, supervision and control equipment, HVAC with provisions for explosive/dangerous gas injections, electrical networks, fire-detection and fire-fighting systems and telecoms equipment.

Each LER has an average length of 50 m and weight of 1000 tonnes. The LERs are being built in Ravenna, will be shipped to the Caspian Sea on barges and will be located on artificial islands in the Caspian Sea.

PROCESS AND UTILITIES BUILDINGS

Offshore

In 2009 Skema, through its local company Skema LLP, and one of the major local industrial group, Isker Consortium, established a 100% local joint venture company called Ozen Port Production Base LLP (OPPB LLP), with the mission to be one of the major EPC contractors in Kazakhstan in the Oil & gas industry for the fabrication of process and utilities modules, local equipment rooms, temporary refuges, packaged substations, pipe racks both for onshore and offshore applications.

OPPB was awarded the EPC contract for the engineering, procurement, testing and commissioning of 12 offshore buildings. The location of fabrication is the AZTU workshop in Atyrau and Atyrau Ozen Port Yard- Kazakhstan. OPPB is the first local contractor to award such scope of supply for the Kashagan Project.

WORLDWIDE / Office / **Houston**

Three years ago, Skema opened a new office in Houston, Texas, USA. The office is conveniently located in the Houston Galleria area, at Suite 1115, 1800 West Loop South. The office plays host to a showroom where clients can view a Skema video featuring the corporate headquarters and the two facilities near Milan where the MV & LV Switchgear and MCCs are manufactured, as well as the yard in Ravenna, on Italy's Adriatic coast. At the Ravenna facility, Skema assembles its prefabricated substation buildings and installs and tests all of the equipment prior to shipping it to the job site ready for installation and commissioning. The video also showcases several of Skema's world-class projects. In addition, the Houston office houses a complete column of the MCC 2000 modular system fitted with withdrawable drawer units and an Integrated Protection and Control System (IPCS) that is capable of protecting low-voltage motors and monitoring and controlling the entire power-generation and distribution plant. The column allows clients to inspect Skema's modular intelligent MCC solution.

Tony Lancione is the Office Manager. Tony can leverage more than 40 years of experience in the engineering, construction and management of international Oil & Gas projects. Tony is fluent in Italian, French and Spanish, and is also Vice President of the Italy – America Chamber of Commerce of Texas. The partner in this undertaking is David Del Tatto, who, like Tony, is a 40-year veteran of the engineering and construction industries, with a great deal of specialist experience in LNG projects.

The Houston office's objective is to boost Skema's brand recognition in North America in relation to major engineering/construction companies and end-user clients, to track its involvement in international projects in all branches of the industry, and to promote Skema's MV and LV MCCs/Switchgear solutions and fully equipped pre-fabricated substations. The Houston office focuses on expanding Skema's success by establishing and consolidating relationships with the company's clients, delivering better support for their development operations and providing assistance on their projects throughout every phase.

To build the reputation of Skema's equipment vis-à-vis the leading engineering and construction companies, the Houston office is holding "Lunch and Learn" events. These events are staged at the client's facility and include a presentation on Skema's operations, experience and equipment manufacturing. The presentations are geared towards the client's designers, engineers, procurement specialists and managers.

The Skema Houston office sponsored a special "Lunch and Learn" event at the KBR office on May 17, 2010.
Around 40 electrical engineers and designers from KBR attended the session. The presentation and subsequent discussion covered Skema's profile, the company and its products, its worldwide presence, and its capacity to supply Medium and Low Voltage Switchgear and Motor Control Centres to all industries, and in particular to the Oil & Gas sector. During the session, considerable emphasis was placed on Skema's capacity to supply Local Equipment Rooms (LERs) and pre-fabricated Medium and Low Voltage Substation buildings that are factory-assembled with all the required equipment pre-installed, wired and tested, before being shipped to job sites all around the world in preparation for their installation and operational commissioning. The event came to a close with a discussion of the flexibility of Skema's management and production operations, the company's ability to respond rapidly to its clients' requirements and its highly qualified post-sales support. This was followed by a Q&A session.

All of the participants were treated to an authentic Texan barbeque lunch.

(The Houston office's objective is to boost Skema's brand recognition in North America in relation to major engineering/construction companies and end-user clients.)

PEOPLE / **Training**

The training of resources is a matter of paramount importance for Skema - one that forms part of the company's consolidated pursuit of excellence.

Achieving the levels of quality that Skema has traditionally delivered to its clients is a challenge that can be met only by people with a great deal of experience, who are very well-acquainted with the technology and best practices deployed throughout the manufacturing process by Skema, from the design phase all the way to the manufacturing operations carried out on the shop floor.

This is the reason for Skema's ongoing investment in – and long-standing commitment to – training programmes.

Over the course of 35+ years, innumerable individuals and teams have attended training sessions conceived, planned and implemented, both in Italy and further afield, by Skema's training experts.

If we were to calculate the number of hours of training provided to Skema's employees, its clients' technicians and the staff of its international partners, we would easily arrive at a four-figure total.

A training programme is currently being planned for the team of Kazakh technicians who will be recruited as the initial employees of Skema LLP Atyrau, Kazakhstan. The recruitment of a local workforce is not only dictated by Kazakh government rules but is also Skema's established modus operandi for its international operations, which generate 95% of the company's turnover.

In brief, the training programme for Skema LLP is being drafted in light of the following:

- Three expert technicians from Kazakhstan, who are already familiar with Skema's products, have been permanent employees of the company since June 2010
- A recruitment campaign is currently being carried out (July and August 2010) with a view to recruiting, in Kazakhstan, a group of at least 10 engineers who have some basic experience in electrical systems and technologies and who also have considerable potential to learn and develop their skills
- This initial team will undergo an extensive training programme at Skema's facility in Milan for up to six months from September 2010 onwards, until the team members have achieved a certified level of competence in all the manufacturing phases and processes
- The training programme will include theory lectures and practical sessions to be held in a dedicated area that has been specifically equipped by Skema for this purpose
- The trainers will be managers and staff members of Skema's Italian organisation

Upon completion of the Skema training programme described above, the Kazakh staff will have reached an appropriate level of competence not only to start replicating Skema's "way of doing things" in the new facility at Atyrau but also to train all the other new Kazakh employees who will be invited to join Skema LLP in the near future.

> Skema would like to give the Kazakh engineers a very warm welcome!

PRODUCTS / **Intelligent MCC 2000**

Skema's Intelligent MCC is a modular system with withdrawable units for powering, controlling and protecting low-voltage motors.

The Switchgear Control Unit (SCU) embedded into the MCC 2000 has up to 16 ports communicating via Rs-485 with Motor and Feeder Control Units using different serial protocols (Modbus, IEC-60870-5-101/103, DNP3) and enables multiple concurrent clients (DCS, ENMCS, local VDU, WiFi laptops) to interface via Ethernet with the switchboard using different protocols (IEC-61850, Modbus/TCP, OPC, IEC-60870-5-104).

Redundant configurations can be supplied thus guaranteeing communication reliability downward to the protections and upward to the control systems (DCS, ENMCS); two Ethernet ports (RJ45 and FO) and one VGA port are standard for every configuration.

Hardwired signals are integrated by remote I/O units, so all types of feeders can be remotely managed.

The SCU's patented firmware allows for the reading and/or setting of the protection parameters and the downloading of the Sequence of Events (SOE) and disturbance recordings, with the response time to DCS commands always below 500 ms.

Local operation and supervision of the switchboard can be achieved by either a touch screen or a wirelessly connected laptop, and the MCC is easily integrated into any DCS and Electrical Network Monitoring System.

- INTELLIGENT SOLUTION WITH CENTRALIZED MONITORING AND CONTROL SYSTEM
- MODULAR AND COMPACT, SPACE-SAVING DESIGN AND EASY ASSEMBLY
- FOCUS ON QUALITY, SAFETY AND RELIABILITY
- HIGH PERFORMANCE AT EXCELLENT PRICE LEVELS
- COMPLIANT WITH THE MOST STRINGENT OIL AND GAS STANDARDS (SHELL DEPS)
- FLEXIBILITY DURING THE DESIGN PHASE
- FULLY TYPE-TESTED BY INDEPENDENT LABORATORIES
- FULLY INSULATED BUSBAR SYSTEM
- INTERNAL ARC PROOF
- TESTED FOR SEISMIC LOAD AND SINUSOIDAL VIBRATION
- CONTINUITY OF SERVICE AND EASY MAINTENANCE PROCEDURE
- STANDARDS: CEI EN 60439-1, IEC 61641, IEC 60068-2-6, IEEE 1613, IEC 61850, IEEE C37.90, IEC 60255
- IRIG-B SYSTEM CLOCK UPDATING, DECODING AND GENERATION FOR MILLISECOND-ACCURACY TIMESTAMPING
- OPERATING TEMPERATURE: -40 / +75° C
- PROTOCOLS AVAILABLE ON INDIVIDUAL SERIAL PORTS: DNP3 SERIAL, MODBUS MASTER/SLAVE, IEC 60870-5-101/103
- PROTOCOLS AVAILABLE OVER ETHERNET: MODBUS/TCP, DNP3 LAN/WAN,IEC 60870-5-104, IEC61850, OPC

MCC 2000 / Main features

Rated insulation voltage (Ui)		1000 V
Rated operating voltage (Ue)		400 V - 690 V
Rated Frequency		50/60 Hz
Rated current	main busbars	≤ 4000 A
	distribution busbars	630 A
Rated short-time withstand current for 1 sec. (Icw)		up to 100 kA
Rated peak withstand current (Ipk)		up to 220 kA
Degree of protection (according to EN 60529)	external enclosure	IP31/ IP42
	with open door	IP2X/ IP4X
Segregation form		from 4 type B
Maximum number of modules for section		12 (24)
Access		from the front
Entry and exit of cables		from top or bottom

Skema®

Graphic design and layout
Chiara Previti
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Photos:
Rohn Meyer
Roberto Rapetti

Printing
Leva S.p.A. - Arti Grafiche

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is available to download in PDF format
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