



POWER DELIVERY PRODUCTS

THE M&I ELECTRIC STORY



M&I Electric has been a leading provider of electrical products and services to the domestic marine and industrial and global oil and gas markets for over 70 years. Initially founded in Beaumont, M&I is headquartered in Houston, TX and has US sales, support and manufacturing operations in Texas and Mississippi, and operations in Rio de Janeiro and Macaé, Brazil. In addition, M&I Electric has interests in two joint ventures in Singapore; and Xian, China. The company has a worldwide oil & gas customer base with strategically located operations to support their demands. M&I Electric's parent company, American Electric Technologies, is a publicly traded company on the NASDAQ stock exchange, and is traded under the ticker symbol "AETI"

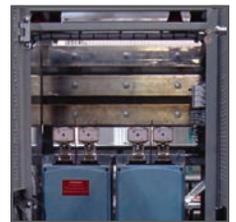
M&I Electric offers power distribution and control products, electrical services and E&I construction services. South Coast Electric Systems, LLC, a subsidiary, provides products and services to marine and industrial markets. Our mission is to be the leading supplier of power delivery solutions to the oil & gas and renewable energy industries. Our customers include traditional oil and gas companies, including off-shore and land drilling, production companies, midstream companies, marine vessels, pipelines, petrochemical companies and refineries. We also serve power generation, co-generation and renewable industries. Our core competencies begin with our ability to apply proven, reliable electrical technologies to overcome complex power engineering

challenges. Our power delivery experts will design and implement the most optimal solution for our customers' complex requirements. Our electrical engineers and project managers recognize and help our customers navigate through the pressures involved with complex projects with limited internal resources, quick response/short cycle, changing/evolving requirements, and managing multi-vendor equipment.



POWER DISTRIBUTION & CONTROL PRODUCTS FOR THE TRADITIONAL AND ALTERNATIVE ENERGY INDUSTRIES

Our in-house capabilities include design, fabrication, assembly, wiring, and integrated full system testing. These systems are designed to meet the broadest classification standards in the industry.



CUSTOM DESIGNED POWER DELIVERY SYSTEMS

- Short delivery cycles
- Special enclosure design or sizing
- Custom assemblies with non-standard components
- Match and line up to existing apparatus
- Designed for harsh environments and hazardous conditions
- Microprocessor-based automation systems
- Unique or high-capacity bussing arrangements
- Manufactured cabinets using mild-steel, aluminum, or stainless steel construction
- Integrated power distribution centers
- Turn-key systems

STANDARDS

- Industrial Equipment designed and manufactured to meet ANSI, NEMA, IEEE, IEC and NFPA standards.
- Offshore and marine equipment designed and manufactured to meet ABS, USCG, Lloyds, DNV, CSA, DOE, and IEEE45 standards.

CERTIFICATIONS

- ISO 9001-2008 Certified
- UL 1558, 891, 508
- IEEE C37.20.7
- CE, CSA



INTELLISAFE™

ARC RESISTANT SWITCHGEAR

M&I Electric's Generation 2 Arc Resistant MV Switchgear is designed with the vision that safety is not an option. IntelliSafe™ provides industry leading, patent pending safety features including a simple but rugged door design, door to breaker position interlocks, automated electrical racking, and intelligence built in to help prevent failures and maximize plant uptime.

Our non-invasive monitoring system is fully customizable for any application and can be easily integrated into any SCADA or higher level system. Our standard UL Listed design is 100% compliant with Process Industry Practices (PIP) specification requirements for Metal-Clad switchgear.

Features	Benefits
Arc Clamp™ single handle multi-point latching door with full height welded piano door hinge	Simple to operate with no tie-down bolts, no bank vault linkages to fail and prevents door sagging over time
Automated Remote Breaker and VT racking	Takes operating personnel out of harm's way during the breaker and VT racking process
Mechanical through door trip & breaker lockout	Maximizes operator safety by allowing a visual mechanical lockout / tag out point through the door
Front and rear door interlocks	Prevents access to energized compartments when the breaker is racked and or closed
Tested with multiple IR windows installed	Enables thermal inspection without opening door while switchgear is energized
Real-time monitoring of racking motor current and torque, Partial Discharge, bus bar connections, temperatures and compartment humidity	Enables data trending for predictive maintenance to predict failures and maximize uptime
Real-time HMI visualization of breaker position, status & movement during the racking process, front & rear door position status and other data	Provides remote control and visualization of racking process and position confirmation. Allows real-time control of breaker operation
Industrial Internet of Things Enabled with optional wireless communications	Real-time monitoring and trending of data helps predict failures and maximize uptime

For more information email: IntelliSafe@mielelectric.com
or visit our website at www.mielelectric.com/intellisafe



Specifications:

- Up to 15kV, 4000A, 50kA, two high
- 10 & 11 Ga. welded steel
- 100% PIP Spec compliant
- ANSI C37.20.7 tested
- Type 2B construction
- Certified by KEMA test lab
- UL Labeled



Mechanical through door trip with breaker lock-out

LOW AND MEDIUM VOLTAGE CUSTOM DESIGNED SWITCHGEAR

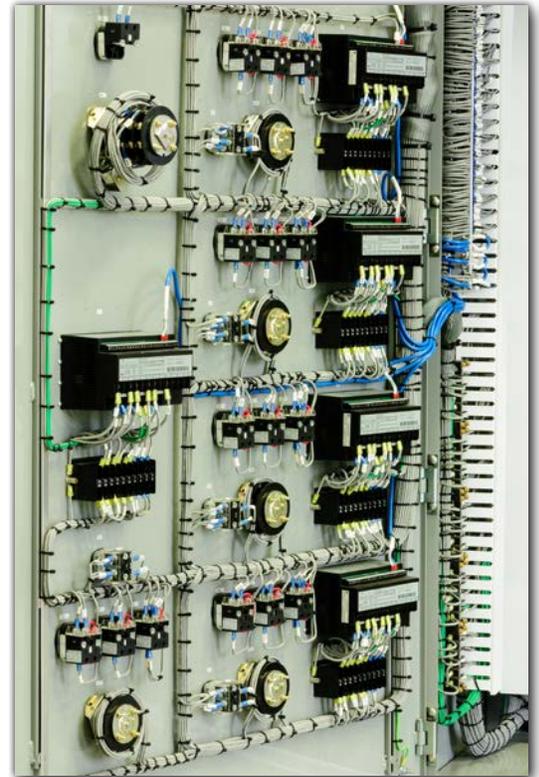
IEEE / ANSI

- Designed & manufactured in accordance to ANSI C37
- Metal clad & metal enclosed through 38KV, 1000 MVA
- Optional arc resistant and arc mitigated switchgear available
- Bus systems through 10,000 amperes and 100 KA bracing
- Generator control with automatic parallel & Load share
- Systems utilizing Eaton, Siemens, ABB, & Schneider Breakers

MEDIUM VOLTAGE

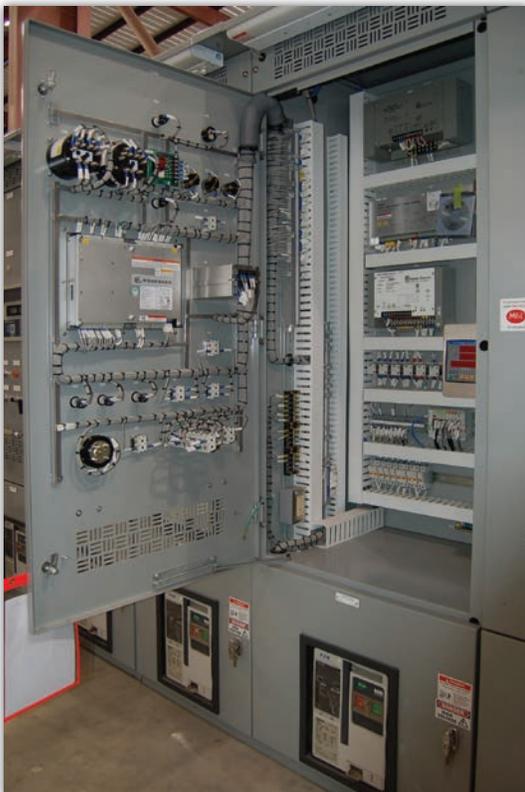


27kV Two High Switchgear



Welded Wire Anchoring System

LOW VOLTAGE



Metal Enclosed Switchgear



Remote Breaker Racking



Marine Switchboard

POWER DISTRIBUTION CENTERS

Power Distribution Centers (PDCs) provide the most cost effective installation for power control systems. These enclosures are completely designed, assembled and tested at the factory and typically only require cable installation in the field.

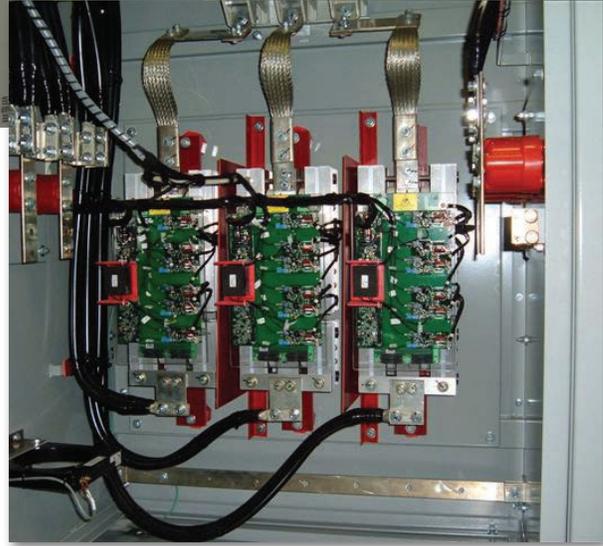


- Manufactured to special environments and hazardous areas
- Short delivery cycles
- Enclosures manufactured from:
 - Interlocked panels
 - Heavy gauge crimp plate
 - Galvanized steel
 - Aluminum
 - Stainless steel
 - Steel plate-seam welded

- Multi split designs
- Specialized HVAC systems
- Onshore and Offshore designs
- Blast rated designs



MOTOR CONTROL CENTERS



Solid State Soft Starter

- Low & medium voltage MCC's through 7.2kv
- Components utilizing Eaton, Siemens, Rockwell (A-B) and GE
- Solid State soft starters through 7.2kv
- Custom design including PLC controls and Marshalling cabinets
- Custom arrangements with transition to switchgear or bus duct
- Variable frequency drives



UNIT SUBSTATIONS

Unit Substations integrated with incoming breakers or switches, transformers and distribution switchgear can be provided on portable skids or for permanent installations.

- Custom designed to all applicable standards
- Match and line up to existing apparatus
- Systems through 38KV and 10,000 amperes

SPECIALTY PANELS & CUSTOM ENCLOSURES

- Specialty/UL-508A panels are available with PLC, relays and owner furnished components
- Cabins & Powerhouses are available with skid type bases or trailer mounted with custom configuration for plugs and receptacles



Driller's Cabin



Drilling Rig Powerhouses

IEC EQUIPMENT

MEDIUM VOLTAGE

- Designed & manufactured in accordance with IEC 60200, 60694 & 62271-200
- Systems provided through 12kv, 63ka
- Pressure relief vents for arc managed gear
- Bus systems through 3000 amperes
- Systems utilizing Eaton components

LOW VOLTAGE

- Designed & manufactured in accordance with IEC 61439-1
- Systems provided through 690 VAC, 100ka
- Switchgear manufactured to meet Form I-IV standards
- Generator control switchgear with automatic parallel
- Bus systems through 7000 amperes



AC DRIVES

M&I's eDrives are available liquid or air cooled with diode multi-pulse or fully regenerative active front-ends for reduced harmonics.

AC Drives are available in both single and multiple inverters on common DC bus, at 690 VAC through 4000 HP.



1200 Amp Module (Frame 13)

LOW VOLTAGE AC VARIABLE SPEED DRIVES

- Advanced AC drive technology utilizing seventh generation technology
- Over voltage and under voltage stall protection
- Ambient compensated, auto power reduction upon over temperature and overload
- Roll out power module design for quick change out.
- High speed fiber optic communication capabilities include Ethernet, Devicenet, Profibus, & CAN bus
- Air cooled 6-24 pulse, or Active Front End AC Drives through 690 VAC, 2000 HP.
- Liquid cooled 6-24 pulse, or Active Front End AC Drives through 690 VAC, 4000 HP.



AC Drive System



2200 HP AC Drive (Vacon) - (Frame 14)



2200HP Air Cooled Drives (ABB)



DC DRIVES

DIGITAL DC DRIVES

M&I's Digital DC Drives utilize proven microprocessor technology including PLC controllers. These systems are easily adaptable to communicate with a local network or Ethernet. The bridge is easily accessible from the front for maintenance and all high voltage components are protected by safety barriers.

- Programmable regulator, PLC
- Connectivity to various operator interfaces including touchscreen
- Full four quadrant SCR bridge
- Series or shunt type systems
- Designed to meet IEEE, ABS, & DNV
- Electronic armature reversing
- Automatic field weakening
- Regenerative braking



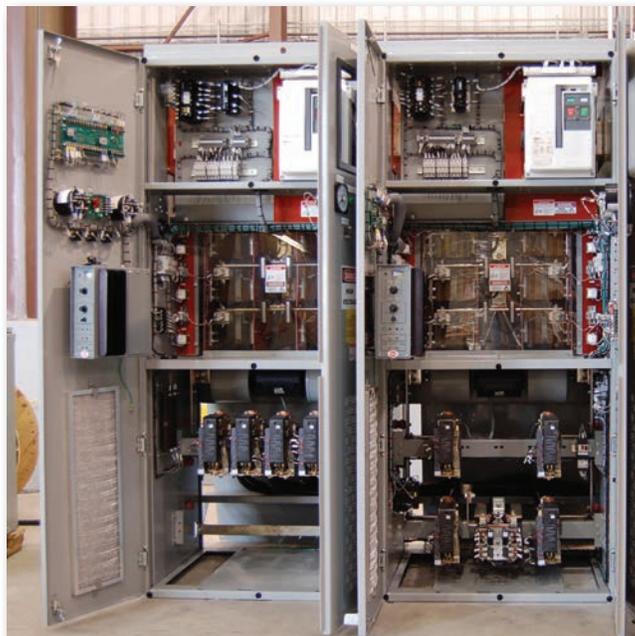
Digital SCR System



ANALOG DC DRIVES

M&I provides analog SCR drive systems and replacement parts for land and offshore rigs. These systems and components are a direct replacement for analog systems built over the past 20 years.

- Complete analog SCR systems utilizing proven technology
- Series or shunt type systems
- Front access up to 1600 Amps
- Available with power & control building for land rigs
- Spare parts available for existing analog systems
- Repair of AC & DC regulators from existing systems



Analog SCR System



AUTOMATION & CONTROL SYSTEMS

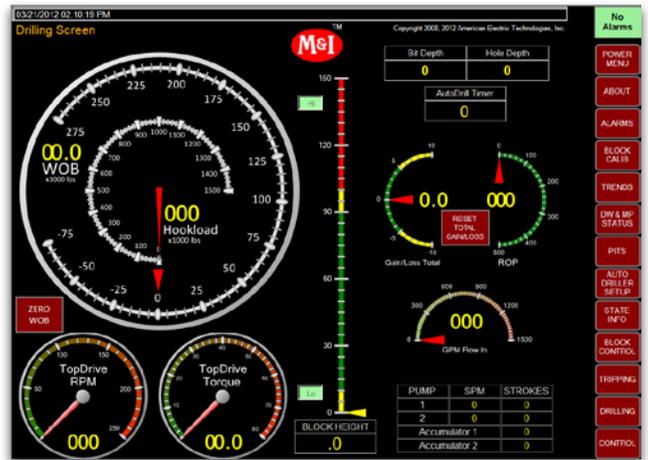


DrillAssist® Driller's Control Chair

- Drilling Solutions (Land & Offshore):
 - **DrillAssist®** Autodriller DrawWorks Control Systems
 - Pit Volume Totalizer (PVT) Systems
- Marine Solutions:
 - Vessel Management Systems
 - Ballast Control & Monitoring Systems
 - Tank Gauging Systems
- Solutions using Rockwell (A-B) & Siemens hardware and software



Driller's Control Screen



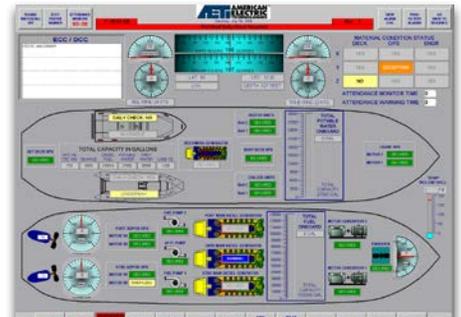
Driller's Control System



Auto Driller Control Panel



Ballast Control Panel



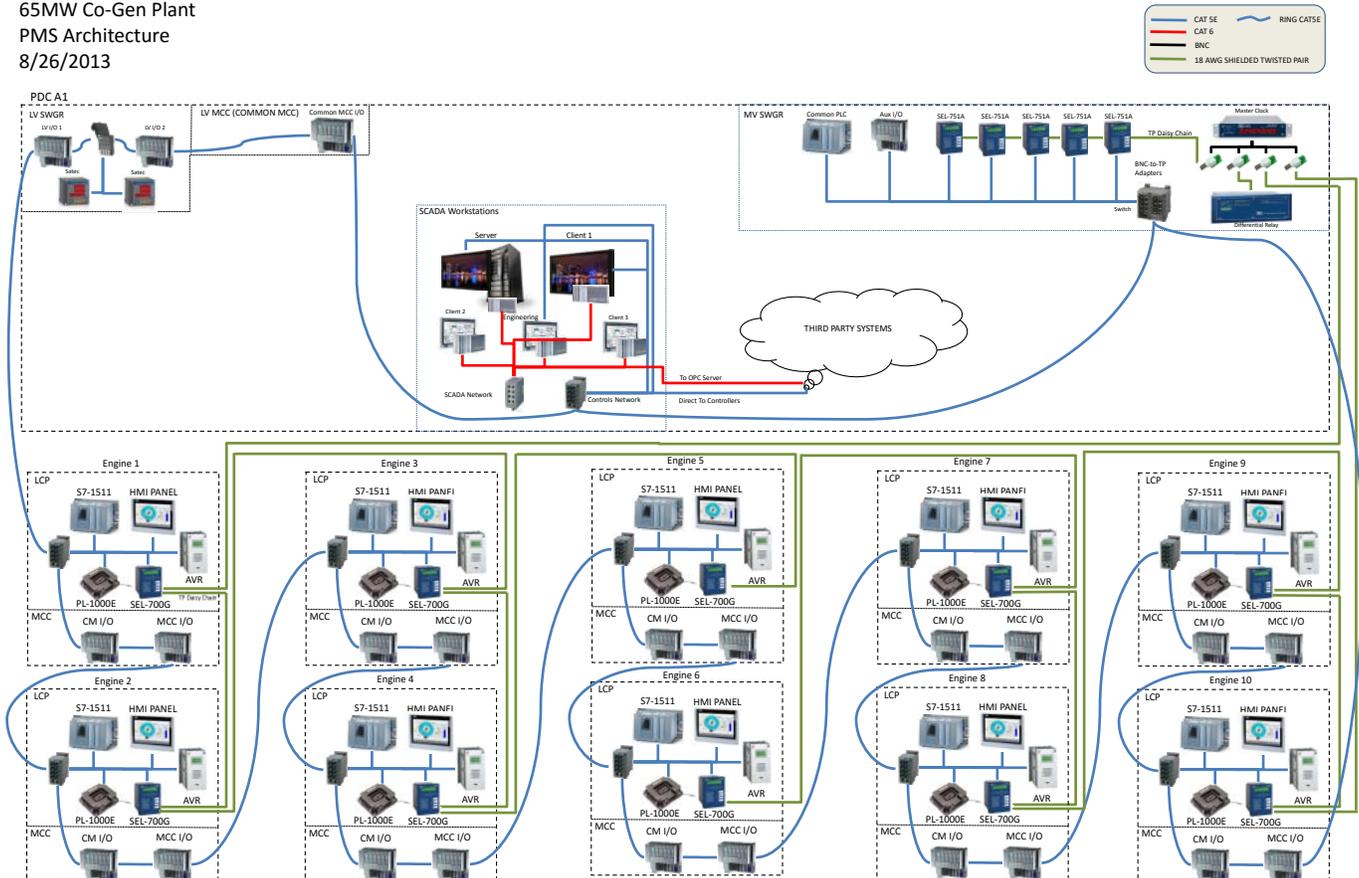
Vessel Management System



Power Management System

- Power Management Systems with load sharing, load shedding & Grid tie
- Power SCADA systems
- Stand-alone HMI panels for remote operation of equipment
- Local Control Panels
- Industry Solutions:
 - Process Control And Monitoring Systems
- IP-Based Closed Circuit Television Systems (CCTV)
- Custom-Designed Instrumentation
- Integrated Touchscreen HMI Workstations
- Data Acquisition Systems
- RTU's & Marshalling Cabinets
- Hardware and software platforms: Rockwell (A-B) and Siemens

65MW Co-Gen Plant
PMS Architecture
8/26/2013



TOTAL SYSTEM RESPONSIBILITY

M&I Electric has the unique ability of providing customers an integrated turn-key solution. Our capabilities include evaluating customers needs, carefully designing and manufacturing the system, on-site supervision and installation, testing and commissioning to provide total systems responsibility.

- Power delivery products
- Installation and construction services
- On-site start up and commissioning
- Electrical equipment testing services
- Preventive Maintenance



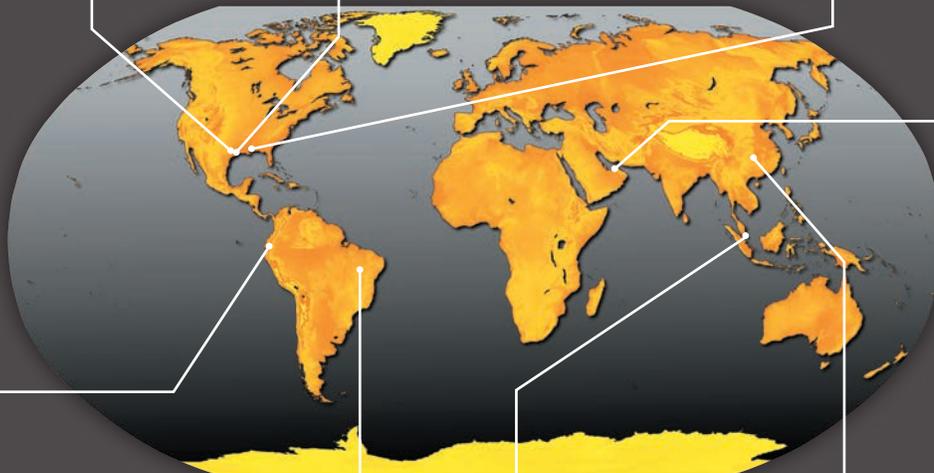
Houston, Texas - Corporate Headquarters
1250 Wood Branch Park Dr. • Houston, TX 77079 • (713) 644-8182



Beaumont, Texas
4775 South M.L. King Pkwy. • Beaumont, TX 77705
(409) 838-0441
TECL 18385



M&I Electric Service Center
1103 Barataria Ave • Houma, La 70360
(985) 746-5988



Dubai
World Wide Power
Services
971(4) 886-1155

Ecuador
Coretrading
593-2-2460-480



M&I Electric Brazil
+55 (22) 2210-7501
Macaé - Rio de Janerio



BOMAY Electric Industries Co.
Xián Hi-tech Industries Development Zone • Xián, Shaanxi, China
86(29)68688819



M&I Electric Far East PTE LTD
No. 8 Aljunied Ave 3 Oakwell Building • Singapore 1438
65-6741-2788



www.aeti.com
www.mielectric.com