



Experience List

Driven by Energy...

2008/2009 Engineering and consulting work performed by Enertia Engineering Ltd. & Subsidiaries:

Dates	Client	Project	Country	Description
2009	SUNCOR	Suncor Cyclone Extraction Plant	CANADA	Electrical and Instrument design for a \$40 Million dollar facility.
2009	AMEC	Arc Flash Analysis	CANADA	Perform detailed modeling and arc flash analysis for multiple industrial locations.
2009	SUNCOR	Suncor Plant 300 Field Engineering and turnover Support	CANADA	Support for Electrical/Instrumentation field engineering leadership. Support for turnover of engineering and construction documents to Commissioning and Start Up group to meet critical dates for project completion. Plant 300 is a \$1 Billion extraction plant.
2009	DMI Engineering International Cooling Towers EPCOR-Trans-Alta	Power System Study for cooling tower.	CANADA	Power System Study for cooling tower. Model completion & power studies included: Load Flow / Voltage Drop Short Circuit Motor Starting Device Protection Co-ordination Arc Flash analysis
2009	EPCOR / Altalink	Arc Flash Analysis	CANADA	Detailed Arc Flash Modeling and Analysis.
2009	EPCOR	Panel Project	CANADA	Assemble and test substation protection panels for multiple Substations.
2008	EPCOR	Relay cabinet retrofit	CANADA	Provide retrofit door for relay cabinets in Victoria Substation
2008	EPCOR	Substation Automation	CANADA	Assemble and test 5 ea Substation SCADA Automation panels
2008	Petro-Canada	Refinery System Model Conversion	CANADA	Electrical system model conversion and power studies included: Load Flow / Voltage Drop Short Circuit Device Protection Co-ordination Fuse Specification V&V
2008	BNG Specialized Engineering	Electrical System Relocation	CANADA	Electrical System Relocation Feasibility Analysis. <ul style="list-style-type: none"> • On-site consultation on relocation issues • Developed model for a mobile electrical system • Analyzed the system impacts at the new connection point through load-flow, short-circuit, harmonic analysis, and dynamic motor starting
2008	Suncor Millennium Extraction	Automation Planning	CANADA	Information Technology Plan for Major Oil Sands Construction Project <ul style="list-style-type: none"> • Review prospective network connection concepts • Propose proper software administration and utilization for projects over \$ 20 million
2008	CNRL	TCC Conversion	CANADA	Replicate existing Power Plot TCC's into customer ETAP model. Created 120 TCC's in ETAP and verified settings against existing TCC's
2008	Suncor	CEP Cyclone Plant - E-House	CANADA	Mechanical Design, Engineering, Construction and Population of E-House for classified project as per layout design produced by AC-TFS. E-House to be large size steel skid with self framing building suitable for mobile 3 season application.

2008/2009 Engineering and consulting work performed by Enertia Engineering Ltd. & Subsidiaries: (Continued)

Dates	Client	Project	Country	Description
2008	Suncor	CEP Cyclone Plant - Arc Flash	CANADA	To assist Suncor Energy Inc. in completing an electrical and instrumentation design and related documentation for the CEP Cyclone, Roller Screen, and Hot Water Pump Projects at Suncor Energy
2008/2007	Suncor Oil Sands	Master Plan Model Project	CANADA	Entire Suncor Oil Sands electrical system was modeled using ETAP <ul style="list-style-type: none"> • On-site equipment data collection • Final model includes ≈1,300 buses completed with protection device settings • Load-flow, short-circuit, relay coordination review, and arc flash studies were conducted • Reliability assessment were completed for high-voltage distribution system • Load estimation study was customized according to real measurement data

2008/2009 Manufacturing and product development work performed by Enertia Engineering Ltd. & Subsidiaries:

Dates	Client	Project	Country	Description
2009/ 2010	PETRODAR	FIELD DEVELOPMENT	SUDAN	6 each 260 kVA VSD skid, 12 Pulse, air conditioned control room, step down and step up transformer with sinewave filter
2009	CONFIDENTIAL	FIELD DEVELOPMENT	KUWAIT	60 each 5000V, 200A Switchboards
2009	AC OFS / DOMESTIC	SUBSTATION CONTROL & SCADA	CANADA	9 each MCC Control Sections, ABB & SEL Control Components, 2 each SCADA Sections
2009	PETRODAR	FIELD DEVELOPMENT	SUDAN	24 each 260 kVA VSD skid, 12 Pulse, air conditioned control room, step down and step up transformer with sinewave filter
2009	PETROMINERALES	FIELD DEVELOPMENT	COLUMBIA	5 each 1200 kVA NEMA3R VSD with HV sinewave filter
2009	AL KHORAYEF COMM CO	PILOT PROJECT	INDONESIA	5kV Explosion Proof Junction Boxes
2009	BORETS WEATHERFORD	NEMA4 SWF ARTIC & NEMA1 HPS VFDS	CANADA	3Ea 156A, 1EA 240A NEMA4 with Sinewave Filters & Artic Heating Kits
2009	BORETS WEATHERFORD	SUBSTATION CONTROL & SCADA	CANADA	10 each MCC (Municipality Utility Power) Automation Panels
2008	ZUEITINA OIL COMPANY	WAREHOUSE STOCK	LIBYA	2 each 3600 volt 200 amp switchboards

2008/2009 Manufacturing and product development work performed by Enertia Engineering Ltd. & Subsidiaries:

Dates	Client	Project	Country	Description
2008	ARABIAN GULF OIL COMPANY	WAREHOUSE STOCK	LIBYA	25 each, 11kV, 300kva Step Down transformers
2008	REDA PUMP COMPANY LIBYA	WELL TESTING VFD PACKAGE	LIBYA	1 each 561 kVA Yaskawa VSD, air conditioned skid mounted control room skid & load filter, 1 each 3406 Variable Speed Generator in Custom 20ft HC Container
2008	REPSOL OIL OPERATIONS	FIELD DEVELOPMENT	LIBYA	2 each 427 kVA VSD skid, air conditioned control room, step down and step up transformer with load filter, full bypass system
2008	BORETS WEATHERFORD	NEMA4 VFD	CANADA	4 each 156A / 180A / 304A NEMA4 VFD c/w Sine Wave Filters for Brazil
2008	AKAKUS (REPSOL) OIL OPERATIONS	FIELD DEVELOPMENT	LIBYA	1 each 427 kVA VSD skid, air conditioned control room, step down and step up transformer with load filter, full bypass system
2008	BORETS / PDO OMAN	NEMA4 VFD	OMAN	4 each 180A NEMA4 VFD and 2 each 304A NEMA4 VFD c/w Sine Wave Filters for new PDO project
2008	DOMESTIC CANADA	NEMA4 VFD	CANADA	12Ea Various 96A to 515A NEMA4 VFD for HPS and c/w Sine Wave Filters for ESP
2008	PETROMINERALES	FIELD DEVELOPMENT	COLUMBIA	2 each 1200 kVA NEMA3R VSD with HV sinewave filter
2008	PETROMINERALES	FIELD DEVELOPMENT	COLUMBIA	2 each 4160V 260A NEMA3R Medium Voltage VSD
2008	J&P // AKAKUS (REPSOL) OIL OPERATIONS	FIELD DEVELOPMENT	LIBYA	14ea Wellhead MV chemical injection power & disconnect systems, ABB control panels
2008	PETRODAR	FIELD DEVELOPMENT	SUDAN	8 each 260 kVA VSD skid, air conditioned control room, step down and step up transformer with sinewave filter
2008/7	REPSOL OIL OPERATIONS	WAREHOUSE STOCK	LIBYA	34 each 3300/3600 volt 200 amp switchboards, 2 each Transformers
2008/7	BORETS / PDO OMAN	NEMA4 VFD	OMAN	2 each 180A NEMA4 VFD and 2 each 304A NEMA4 VFD c/w Sine Wave Filters for new PDO project
2008/7	REPSOL OIL OPERATIONS	WAREHOUSE STOCK	LIBYA	32 each 3300/3900 volt 200 amp switchboards, 2 each Transformers

IN ADDITION TO THESE PROJECTS, WE ROUTINELY SUPPLIES CONSUMABLE PARTS TO THE DRILLING AND ARTIFICIAL LIFT (ESP / PCP) INDUSTRIES IN WORLDWIDE

Previous engineering and consulting work performed by Enertia Engineering Ltd. & Subsidiaries:

Client	Project	Country	Description
Saudi Aramco	Ras Tanura, Kingdom of Saudi Arabia	Saudi Arabia	Real time power monitoring and power system analysis
PT Newmont	Sumbawa, Indonesia	Indonesia	Transient stability and intelligent load shedding
NASA	Space Gateway Support - Florida, USA	USA	Geospatial information systems and power system analysis
City of Lethbridge	City Analysis, Lethbridge, Alberta	Canada	Geospatial information systems and power system analysis
Chevron	Chevron - California, USA	USA	Power system analysis
Southern Peru Copper	Southern Peru Copper, Peru	Peru	Power system analysis and relay coordination [modeled entire southern half of Peru]
Dove Energy	Dove Facilities Analysis	Yemen	Harmonic Analysis Study
Amoco	Alberta, Canada	Canada	Harmonic analysis and motor start
University of Alberta	University Study	Canada	Harmonic Analysis Study
Greater Nile Petroleum Operating Company	Heglig Power Study	Sudan	power system analysis and harmonic study
Altalink / Epcor	Banff, Alberta	Canada	Harmonic source detection and contribution analysis for distribution networks
BC Hydro	British Columbia Random Analysis	Canada	Harmonic analysis for distribution systems with distributed and random harmonic sources
ATCO	ATCO at Vegreville, Alberta	Canada	Distributed generator islanding detections with automatic meter reading technique
Saskpower / Hydro One	Canada Wide Network Study	Canada	Distribution system impedance measurement for electric networks across Canada
University of Alberta	Modeling Study w/ PhD Students	Canada	EMTP modeling studies for electrical machines
University of Alberta	Modeling Study w/ PhD Students	Canada	EMTP analyses for transformer and capacitor energization inrush currents
University of Saskatchewan	Modeling Study w/ PhD Students	Canada	Reliability studies for power networks with FACTS devices and with wind and solar generations
Chinese Academy of Sciences	Institute of Electrical Engineering, Beijing	China	Cooling system investigation for large electric machines
Anshan Electric Power Corp	Anshan Manintenance Project	China	Development of the equipment and maintenance information management system
Hunjiang Electric Power Corp	Hunjiang, China Reginal Distribution	China	Stability control system studies for regional power networks with industrial plants and cogeneration
Syncrude Canada	Oil Sands Study, Ft. McMurray, Alberta	Canada	Harmonic Analysis Study
Suncor Canada	Oil Sands Study, Ft. McMurray, Alberta	Canada	Power System Analysis

Previous manufacturing and product development work performed by Enertia Engineering Ltd. Subsidiaries:

Client	Project	Country	Description
REPSOL OIL OPERATIONS	FIELD DEVELOPMENT	LIBYA	Multiple VSD skids, air conditioned control rooms, step down & step up transformers with load filters and full bypass systems
REDA PUMP COMPANY LIBYA	WELL TESTING VFD PACKAGE	LIBYA	561 kVA Yaskawa VSD, air conditioned control room skid & load filter & 3406 Variable Speed Generator in High Cube
WEATHERFORD	NEMA4 VFD	SURINAME	Multiple 68A NEMA4 VFDs
SAFWAN ENGINEERING / LUFKIN	RE-ENGINEERING VFD SYSTEMS	KUWAIT	Design & Engineer NEMA 4X conversions for 270 VFD systems
REPSOL OIL OPERATIONS	FIELD DEVELOPMENT PLAN	LIBYA	Design & Engineer field development. Included complete power systems design , specifications, and tender preparation.
AGIP OIL COMPANY	WELL TESTING & FIELD DEVELOPMENT	LIBYA	600 kVA Caterpillar 3412 sound proof generator, 600 kVA Siemens VSD, air conditioned control room skid and load filter, multiple 550 kVA Switchboard skids with transformers
ARABIAN GULF OIL COMPANY	WAREHOUSE STOCK	LIBYA	Multiple 1500 V 160 amp switchboards
ENTP	DRILLING EQUIPMENT	ALGERIA	Drill pipe bulk order
AGIP OIL COMPANY	WELL TESTING VFD PACKAGE	LIBYA	600 kVA 12 pulse VSD skid with step down and step up transformer with load filter
AGIP OIL COMPANY	UPGRADE / MODIFICATION	LIBYA	Multiple fire suppression systems for retrofitting into manufactured VFD skids
WNPOC	FIELD DEVELOPMENT	SUDAN	Multiple 561 kVA Yaskawa VSD, air conditioned control room skid, load filter & stepdown / stepup transformers
SONATRAC	DRILLING EQUIPMENT	ALGERIA	Drill pipe stabilizer bulk order
WNPOC	FIELD DEVELOPMENT	SUDAN	Multiple 344 kVA & 561 kVA Yaskawa VSDs, air conditioned control room skid & load filter, multiple 300 kVA switchboard skids with step down transformer
IRANIAN OIL COMPANY	PCP TRIAL	IRAN	Supply of PCP parts for use with Weatherford PCP pump system
GNPOC	FIELD DEVELOPMENT	SUDAN	Multiple 344 kVA Yaskawa VSD, air conditioned control room skid & load filter, multiple 300 kVA switchboard skids with step down transformer
REDA PUMP COMPANY LIBYA	WELL TESTING POWER PACKAGE	LIBYA	400 kW Caterpillar 3406 variable speed generator well test skid mounted in high cube
AGIP OIL COMPANY	WAREHOUSE STOCK	LIBYA	Multiple 5000 V 200 amp switchboards
REPSOL OIL OPERATIONS	WAREHOUSE STOCK	LIBYA	Multiple 5000 V 200 amp switchboards
OMV EXPLORATION & PRODUCTION	EL SHATIRAH ENHANCED RECOVERY	LIBYA	600 kVA 12 pulse VSD skid with phase shifting transformer, step up transformer and load filter
REDA PUMP COMPANY LIBYA	VARIOUS CLIENTS	LIBYA	Multiple 3300 V switchboards
AGIP OIL COMPANY	AGIP/LASMO ELEPHANT FIELD DEVELOPMENT	LIBYA	Multiple 550 kVA switchboard skids
VEBA Oil Ops.	WELL TESTING VFD PACKAGE	LIBYA	VSD well test skid with 300 kVA VSD and full bypass system with step up transformer and load filter
REPSOL OIL OPERATIONS	FIELD DEVELOPMENT	LIBYA	Multiple 300 kVA VSD skid, air conditioned control room, step down and step up transformer with load filter, full bypass system

Previous manufacturing and product development work performed by Enertia Engineering Ltd. Subsidiaries:

Client	Project	Country	Description
TOTAL FINA ELF	MABRUK FIELD ESP	LIBYA	Multiple 300 kVA VSD skid, air conditioned control room, step down and step up transformer with load filter, full bypass system
IRANIAN OIL COMPANY	FIELD DEVELOPMENT	IRAN	Multiple 250 kVA NEMA 3R air conditioned VSDs and load filters
DOS INDONESIA	FIELD DEVELOPMENT	INDONESIA	Multiple 3300 V 170 amp switchboards
WAHA OIL COMPANY	WAREHOUSE STOCK	LIBYA	Multiple 5000 V 200 amp switchboards
ARABIAN GULF OIL COMPANY	WAREHOUSE STOCK	LIBYA	Multiple 3300 V 170 amp switchboards
NEXAN	WAREHOUSE STOCK	YEMEN	Supply of VSD & ESP parts for use with existing pump systems
AGIP OIL COMPANY	WELL TESTING POWER PACKAGE	LIBYA	600 kVA Caterpillar 3412 sound proof generator
REDA PUMP COMPANY LIBYA	WELL TESTING POWER PACKAGE	LIBYA	400 kW Caterpillar 3406 variable speed generator well test skid mounted in high cube
AGIP OIL COMPANY	AGIP/LASMO ELEPHANT FIELD DEVELOPMENT	LIBYA	Multiple 600 kVA Siemens VSDs, air conditioned control room skid and load filter, 550 kVA Switchboard skid with transformer
AGIP OIL COMPANY	WELL TESTING POWER PACKAGE	LIBYA	600 kVA Caterpillar 3412 sound proof generator
AGIP GAS	WATER INJECTION SYSTEM	LIBYA	Multiple 5000 V, 550 kVA switchboards
VEBA OIL OPERATIONS	WELL TESTING POWER PACKAGE	LIBYA	400 kW Caterpillar 3406 variable speed generator well test skid mounted in high cube
REPSOL OIL OPERATIONS	FIELD DEVELOPMENT	LIBYA	Multiple 3300 V switchboards and step down transformers
PETROBEL	WAREHOUSE STOCK	EGYPT	Spare part for repairs of valves
VEBA OIL OPERATIONS	AMAL GOSP POWER UPGRADE	LIBYA	Multiple Caterpillar 3508 700 kW generator sets in sound attenuated enclosures
PETRODAR	FIELD DEVELOPMENT	SUDAN	Multiple 200 kVA VSD skids with full bypass system, air conditioned control room with step down and step up transformers with load filter
REPSOL OIL OPERATIONS	FIELD DEVELOPMENT	LIBYA	Multiple 300 kVA VSDs with step down transformer and step up transformer and load filter
AGIP OIL COMPANY	AGIP/LASMO ELEPHANT FIELD DEVELOPMENT	LIBYA	Multiple 550 kVA switchboard skids with step down transformers

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