Incorporated in 1983 Martech Electrical Systems Ltd.as an industry leader for Commercial, Industrial and Residential Electrical installations in Canada recently moving into the USA with corporate offices in Washington State and Ohio.

Other services offered by the ***Martech Group*** include:

* Power line work in transmission and distribution
* Electrical motor shop servicing – industrial clients and walk-in customers
* Fabrication shop certified to:
  + CWB 47.1 Div 2 structural welding code
  + AWS D1.2 aluminum welding
  + BCH technical specification E825 R10
* Communications and wireless data systems

MESL has experience building and wiring specialty E-Houses (Control Buildings) both on and off site. Some examples are:

2016 **Teck Cominco**, Bi-Sulphate Addition

2013 **SNC Lavalin,** Waneta Utility Building (ASL/JV), Waneta Substation

2010 **BC Hydro**, Sachteen Control Building

2009 **Fortis BC,** Arawana Control Building, Arawana Substation

2007 **Teck Cominco,** Emerald Switching Station, 69kV

Our substation work includes, but is not limited to:

* High-voltage equipment installation
* Transformer assembly and installation
* Soft and Hard (Aluminum Bus) Bus Installation
* Scada and Protection and Control schemes
* Structural steel erection
* Civil construction
* Martech has experience working in operating substations from 500KV and lower, executing work for equipment upgrades

Examples of our Substation Projects are listed below:

2017/18 **City of Nelson**, Decommissioning City Substation

City of Nelson, Holli Kosof,

* Provision of labour, materials and equipment required to decommission and remove City Substation

2017/18 **Ruckles Sub Station Rebuild**, Civil/ Electrical Services

Fortis BC, D’Arcy Caron,

* Survey work, grubbing, demolition, temporary and permanent fence construction
* Import fill, compaction, geogrid and/or Geotech fabrics, retaining walls, asphalt, insulating gravel finishing and drainage reconfiguration of the 60kV transmission supply lines
* Establish construction lines and grading stakes as required
* Demolition and disposal of the existing 60KV wood structures
* Concrete foundations, anchor bolts, containment drainage, transformer oil, containment, oil containment fire quenching stone, installation of underground conduits, installation of cable trenches and of station grounding system
* Provide all materials required for the transformer drainage system
* Install station ground grid system in accordance with the drawings
* Install all required 13kV and 4kV distribution egress ducts, pull-boxes, backfill and compaction
* Demolition of existing control building
* Salvage of existing equipment and structures
* Erection of all new galvanized steel structures
* The installation of all bus work, insulators, etc.
* The installation of all high and low voltage apparatus
* Assistance with placement of new control building and installation
* Assistance with placement of new transformers and installation of any required hold down hardware/anchors and grounding
* Installation of station lighting fixtures
* All demolition and installation of electrical requirements, cabling/ wiring/ mounting etc.
* Relocation of existing 13kV vacuum feeder breaker
* Installation of all above grade conduits, above grade grounding, equipment and phase labels
* Wiring and commissioning of switchyard lighting system, commissioning of outdoor 120/240VAC power receptacles
* Installation and wiring of the transformer T3 and T4/5 containment pit level alarm switches
* Supply and installation of aluminum cable tray and ¼” non-slip aluminum covers required at transformer T3

2017 **R.G. Anderson (RGA) Carmi Substation**, Upgrade

Fortis BC, Darrin Marshall,

* Provide labour, equipment, material and services to complete the civil/physical services
* Excavation and installation of foundations
* Backfill
* Installation and bedding of conduits (includes temp run to MOB-2 from pull box), including termination to equipment
* Installation and connection of ground grid
* Demolition of existing fence, installation of new fence and enlarging the South gate (at Control Room) by 60”, including grounding;
* Completion of access road and paving
* Site insulation gravel as required
* Installation and grounding of steel bus support structures
* Installation of all bus work, insulators, station lighting, junction boxes, etc. necessary to “dress” the steel structures
* Installation of breakers/reclosers/T6 transformer and associated electrical equipment, including grounding of equipment
* The installation of all equipment labeling and phase labels
* Grounding of T5 transformer
* Installation of T5-1 and T3-2 motor operators
* Modifications to perimeter security system High voltage connections of T5 transformer

2017 **Ruckles Station Upgrade**, “E” Building. Control Room

Fortis BC, D’Arcy Caron,

* Fabricate Control Room

2017 **Lambert Substation**, 230kV Breaker Replacement

Fortis BC, D’Arcy Caron,

* Removal of existing AAL 2CB1 Breaker, including the high voltage electrical connections (breaker bus drops)
* Removal of existing AAL 2D2CB1 switch
* Removal of 60KV bus from AAL 2CB1 to AAL T1
* Steel modifications, Grounding alterations
* Installation of new 245kV, 1200 vacuum break AAL 2CB1, including the high voltage electrical connections
* Grounding of AAL 2CB1
* Installation of the 11 new 60KV insulators and steel alterations
* Re-install 60KV bus from AAL T1 to AAL 2CB1

2016 - 2017 **E&M #1 Transformer and Rectifier** Re & Re

Teck Metals Ltd. Murray Gilchrist, Civil, Physical, Mechanical and Electrical Work

* Disassembly and removal of the existing Rectifier
* Disassembly and removal of the existing Transformer
* Demolition of old cabling
* Removal of old piping and HVAC
* 63kv Conductor Upgrades
* 80KA DC Aluminum Buss install and welding
* Assembly of the new transformer
* Install and terminate all new control cables and P&C wiring
* Install new piping and HVAC unit

2016 **E&M Temporary Rectifier and Transformer Installation**

Teck Metals Ltd. Murray Gilchrist, Civil, Physical, Mechanical and Electrical Work

* 63kv Cable install and Rigid Stress Cone Terminations
* New 63kv Disconnect Install
* New 63kv Breaker Install
* 795 and 1272 conductors between the 63kv equipment
* Assembly of the new transformer
* 70KA DC Aluminum Buss install and welding
* Connections to the Temporary Rectifier
* Supply and Install all communications equipment including fiber and fusion connections
* Install and terminate all new control cables and P&C wiring

2015 **Huth Substation**

Fortis BC Cyril Batch, Civil, Physical, and Electrical Work

* Removal of T4, T5, T6 & T7 transformers
* Removal of FDR2 low voltage breaker
* Installation of a refurbished 16MVA, T9 transformer
* Demolition work
* Installation of a new T9M main LV breaker
* Installation of two new LV feeder breakers
* Installation of new protection and control equipment
* Modifications to station service equipment
* Installation of underground FDR1 & FDR2 egress cabling
* Installation of a FDR1 metering CT
* Installation of a new LV structure will contain a FDR1/FDR2 bypass switch
* Installation of VTs, Station Service, and 8kV Mobile connection
* Install and terminate all new control cables and P&C wiring

2013 – 2014 **Williston Substation** Breaker Replacement

BC Hydro / Amec, Douglas McPherson

* Physical and Electrical Work
* Replace four 500kv breakers and associated CT’s
* Replace four 230kv breakers and associated CT’s
* Replace two 69kv breakers and associated surge arrestors
* All Civil Work as required
* Install and terminate all new control cables and P&C wiring

2013 **Selkirk Substation** Waneta Expansion Line Position

SNC Roberta Davies

* Physical and Electrical Work
* Install an A Frame for incoming lines
* Install and commission two 230kv disconnects
* Install a 230kv breaker, Install 230kv CVT’s
* Install and complete P&C wiring for the above
* The project met all milestone dates set by the owner
* The original contract amount was $ 388,211 and final was

2013 – 2013 **Nelson Rosemont Substation Replacement,** Physical and Electrical Work

Nelson Hydro Mike Amos

* Install 35MVA transformer
* Install 69kv and 25kv substation equipment
* Install 69kv SF6 breaker
* Install five 25kv feeder positions
* Install E-House complete with P&C

2013 **Selkirk Substation** Waneta Expansion Line Position, Physical and Electrical Work

SNC Roberta Davies

* Install an A Frame for incoming lines
* Install and commission two 230kv disconnects
* Install a 230kv breaker
* Install 230kv CVT’s
* Install and complete P&C wiring for the above

2013 **Soda Creek Substation**: Gibraltar Supply Reinforcement, Electrical work

Stantec Ibro Hadzismajlovic, P.Eng.

* Install and commission five 69kv disconnects
* Remove and replace a 69kv Breaker
* Install and complete P&C wiring for above
* The project met all milestone dates set by the owner
* The original contract amount was $ 204,225 and final was

2013 **Nelson Rosemont Substation Replacement,** Physical and Electrical Work

Nelson Hydro Mike Amos

* Install 35MVA transformer
* Install 69kv and 25kv substation equipment
* Install 69kv SF6 breaker
* Install five 25kv feeder positions, Install E-House complete with P&C

2012 **Gibraltar Mines, Substation**, and Power Line, Physical & electrical work

Ausenco Roger Hoad

60kv Switchyard

* Install four H frame structures for incoming lines
* Install and commission nine disconnects
* Install and complete P&C wiring for five 60kv breakers
* Assemble two 20/27 MVA Oil Filled Transformers

2010/ 2011 **R.G. Anderson Substation**, Penticton, BC

**Vasseaux Lake Substation**, Oliver, BC, Civil and Electrical Installation

FortisBC, Construction Mgmt & Engineering: BC Hydro, Andrew Leonard,

* Demolition of physical electrical in an energized substation
* New foundations and underground electrical works
* Installation of 230kv steel structures including; dead end lattice structures, disconnect structures, bus supports, and CVT supports
* Install new 230kv disconnects, breakers, CVT’s, rigid bus, and soft bus drops
* Demolition and installation of new P&C cabling and terminations
* Modifications in an operational Control room
* Underground HV cable installation and terminating
* Install new pad mount switchgear

2011 **Passmore Substation**

Fortis BC Scott Bartlett

* Physical, electrical, underground and module fabrication
* Install an A frame and H frame structure for incoming lines
* Install and commission four disconnects
* Install and complete P&C wiring for 60kv breaker
* Install and wire an outdoor control cabinet, Underground HV cable installation and terminating
* Assemble and wire all modules and outdoor module enclosure (Castlegar facility)

2011 **Bella Bella Diesel Generating Station** Reconfiguration

BC Hydro Tom Hedges, Civil and electrical work

* Demolition of existing pole substation
* Install one new transformer and relocate one existing
* Install new pole substation structures and timbers for equipment mounting
* Install new disconnects breakers, bus, and other associated hardware
* All new P&C cabling and terminations
* Underground HV cable installation and terminating

2011 **WXS Substation,** New substation for Waneta expansion project

ASL-JV, Joe Stagliano,

* Install new A frame and CVT structures
* Install new 60kv breaker, disconnect, and CVT’s
* Install new transformer
* All P&C cabling and terminations

2009 **Arawana Substation**, Naramata, BC

Fortis, BC Dave Winters (D-Line Services)

* Supply and install a complete control building (assembly at our Castlegar shop)
* Module assembly and wiring
* Full electrical install in the building including; AC and DC panels, transfer switch, racks with modules, tray, cable, batteries, and building services
* Physical steel installation
* Install electrical equipment
* Install and terminate all P&C cabling
* Underground HV cable installation and terminating

2008 **Brilliant Terminal Station**, Castlegar, BC

Terminal Connector Replacement

FortisBC Inc.

2008 **Greenwood Step-down Station**, Greenwood, BC

Civil and Electrical Work

FortisBC Inc.

2008 **Ellison, Duck Lake & Black Mountain Terminal Stations**, Kelowna, BC

Below Grade Grounding and Ducts Installation

FortisBC Inc.

2008 **Nicola Substation**, 500kV, Nicola, BC Hydro,

Civil and Electrical Installation

British Columbia Transmission Corporation

2008 **Chetwyn Substation**, 230kV, Chetwyn, BC

Civil and Electrical Installation

British Columbia Transmission Corporation

2007 **Granite Switching Station**, Nelson, BC

Civil and Electrical Installation, 69kV

City of Nelson

2007 **Kelly Lake Substation**, Kelly Lake, BC

Civil and Electrical Work, 230kV

British Columbia Transmission Corporation

2007 **Cranbrook Substation**, Cranbrook, BC

Civil and Electrical Work, 230kV & 500kV

British Columbia Transmission Corporation

2007 **Selkirk Substation,** near Trail, BC

Civil and Electrical Work, 230kV & 500kV

British Columbia Transmission Corporation

2006 **Kennedy Capacitor & Substation**

British Columbia Transmission Corporation

2006 **Brocklehurst Substation**, Kamloops, BC

Civil and Electrical Work, 25kV & 138kV

British Columbia Transmission Corporation

2005 to 2007 **Brilliant Expansion Project**, Castlegar, BC

General Electrical & Associated Work

Brilliant Expansion Project and Columbia Power Corporation

* Supply and Installation of grounding and Electrical Embedment’s Design
* Supply & Installation of 230kV Equipment and Facilities

2006 **Waneta Hydro Station**, Waneta, BC

Civil Structural, 69kV & 230kV

Teck Metals Ltd., Electrical & Grounding Sub-Contract

2006 **Kelly Lake Substation**, Kelly Lake, BC

Civil and Electrical Work, 500kV

British Columbia Transmission Corporation

2006 **Ashton Creek Substation**, Ashton Creek, BC

Civil and Electrical work, 500kV

British Columbia Transmission Corporation

2006 **Selkirk Substation**, Transformer T1B

Transformer Installation, 500kV

BC Hydro

2005 **Williston Substation**

Civil and Electrical Work, 500kV

BC Hydro

2005 **Cranbrook Substation**, Cranbrook, BC

Civil and Electrical Work, 500kV

BC Hydro

2005 **Williston & Kelly Lake Substation**

Civil and Electrical Work, 500kV

BC Hydro

2004 **230kV Equipment & Facilities, BEC**

230kV Transmission Line and Powerhouse Switch Yard

* Design & Build

2004 **Vaseaux Lake Substation**

230 & 500 kV Yard

2003 **Gavin Lake Substation**, BCH

Civil and Electrical Work, 69kV

2002 **Nelway Substation**, BCH

Civil and Electrical Work, 500kV

2002 **Walter Hardman Generating Station**, BCH

Civil and Electrical Work, 69kV

2001 **Selkirk Substation**, BCH

Civil and Electrical Work, 500kV

2000 **Selkirk Substation** 2001 Stage, BCH

Civil and Electrical Work, 500kV

1995 **Kennedy 500KV Capacitor Station**, BCH, Mackenzie, BC

500kV Capacitor Bank Installation

Martech Electrical Systems has vast experience in transformer assembling over the last 20 years for many different customers.

In the past three years we have completed transformer assembly for the following projects:

1. **WXS Substation- Waneta Dam Expansion Project**
   * 69kv to 12.5kv 5/5.6 MVA Transformer assembly and installation
   * Install new A frame and CVT structures
   * Install new 60kv breaker, disconnect, and CVT’s
   * All P&C cabling and terminations
   * 12.5kv Power Line Installation
2. **Gibraltar Mines 60kv Switchyard, Substation, and Power Line**
   * Install four H frame structures for incoming lines
   * Install and commission nine disconnects
   * Install and complete P&C wiring for five 60kv breakers
   * Assemble two 20/27 MVA Oil Filled Transformers
3. **Nelson Rosemont Substation Replacement**
   * Assemble and install 69kv to 25kv 35MVA transformer
   * Install 69kv and 25kv substation equipment
   * Install 69kv SF6 breaker
   * Install five 25kv feeder positions
   * Install E-House complete with P&C



