



Elecsar Engineering Co. Ltd.

PO Box 2009
Sarnia, Ontario, N7T 7K2
Tel: (519) 337-6580
Fax: (519) 332-6198
sarnia@elecsar.com

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COMPANY PROFILE

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GOAL

To Provide Reliable Innovative and Cost Effective Engineering Solutions.

MISSION STATEMENT

The electrical engineering services we provide are focused on reliable, innovative and cost effective solutions to meet our client's needs. We are determined to continuously improve what we do by valuing the contribution that we all make, improving our quality and identifying and eliminating waste.

GENERAL

Elecsar Engineering is a team of experienced individuals who have achieved senior careers in facilities engineering for **high voltage electrical systems and electrical utility management**. Each of the principals contributes a distinct expertise to a diverse range of abilities.

Elecsar was conceived in 1981 to provide specialized analytical and design skills for major industries and electrical utilities. We have participated in projects from conceptual feasibility through project design, construction and commissioning in every major area in Canada.

ELECTRICAL DESIGN AND ANALYTICAL STUDIES

We are fortunate to have been commissioned for a variety of electrical system design and analytical studies. These include engineering conducted for a number of municipal utilities, industrial clients and "green power" providers.

ENVIRONMENTAL PROJECTS

We are involved in a number of ongoing environmental projects associated with the Ontario government's FIT and RESOP programs. Details are subject to confidentiality agreements with individual clients.

ELECSAR SAMPLE PROJECTS (RECENT)

COMPLETION	CLIENT	PROJECT DESCRIPTION
on-going	<i>First Solar, Tillsonburg Hydro, Town of Petrolia, Renfrew Power Generation.</i>	Development and Design of Solar and Hydraulic Power Projects, via Ontario's government incentive programs such as RESOP and the FIT Program
on-going	<i>Imperial Oil</i>	Front-end Project Development and Detailed Engineering for Area 3 Power System and Substations Upgrade / Power Supply to new Tail Gas Clean Unit Project / 230/27.6 kV Transformer Station Remote Trip Upgrade / Power Distribution System Hazop
2009	<i>Shell Canada</i>	Detailed Engineering for 230kV/27.6 Transformer Station Remote Trip Upgrade Project / Grounding Grid Upgrade Project
2009	<i>Nova Chemical</i>	Detailed Engineering for 230kV/27.6 Transformer Station Remote Trip Upgrade Project
2009	<i>Lanxess Inc.</i>	Detailed Engineering for 230kV/27.6 Transformer Station Remote Trip Upgrade Project
2010	<i>BG High Voltage</i>	Detailed Engineering for 115kV/27.6kV Bloomsburg Transformer Station (Norfolk Power)
2008	<i>Sun-Canadian Pipeline</i>	Detailed Engineering for Paris Pumping Station Expansion Project
2006	<i>Vaughan Hydro</i>	Detailed engineering, design and specification for Greenwood MTS Expansion
2006	<i>Brant County Power Brantford Power</i>	Conduct Class EA study; detailed engineering, design, specifications and project management for a new 115kV "Brantford Area MTS"
2006	<i>Markham Hydro</i>	Detailed engineering and design, project management, site supervision, operational training for new 230-28kV, MTS #4
2006	<i>Niagara Falls Hydro</i>	Detailed engineering and design, project management for new 115-13.8kV, Niagara Falls Kalar MTS
2006	<i>Hydro Ottawa</i>	Completion of Phase II of Kanata MTS
2006	<i>Grimsby Power Pen West Utilities</i>	Detailed engineering and design for new Niagara West MTS / K-Line Maintenance & Construction Prime

PREVIOUS PROJECTS (2001 – 2006)

CLIENT	PROJECT DESCRIPTION
Praxair (formerly Union Carbide)	Engineering assistance for various air separation plants at locations across Canada
Imperial Oil	Detailed engineering and design to integrate a 125MVA embedded co-generation unit into the refinery power system. New duplicate high-speed relay systems, with four-cycle clearing times, were installed on the feeders
Imperial Oil	Detailed engineering and specification for second 230-27.6kV DESN Station (Sarnia Refinery)
Imperial Oil	Detailed engineering and design, project management, site supervision, commissioning support and analysis to re-route 2 (two) 28kV feeder pole lines and upgrade 2 (two), three-ended feeder protection systems for 6 (six) 28kV feeders.
Imperial Oil	Detailed engineering and design, project management, site supervision, commissioning support and analysis to replace fifteen 28kV circuit breakers and seventeen 28kV disconnect switches.
Grimsby Power	Conduct Class EA study; preparation of specifications for large electrical equipment (transformers and switchgear)
Town of Petrolia	High Voltage Electrical Expansion Studies
Terra Int'l Inc	High Voltage Electrical Expansion Studies
DaimlerChrysler Canada	Provide design, engineering, procurement assistance and construction management for a new 115kV transformer station
Kanata Hydro	Detailed engineering and design, project management, site supervision, operational training for new 230-28kV (1 x 25/41 MVA, Kanata MTS, Phase 1)
Brampton Hydro	Detailed engineering and design, project management, site supervision, operational training for new 230-28kV (2 x 75/125 MVA, MTS #1)
Vaughan Hydro	Detailed engineering and design, project management, site supervision, operational training for new 230-28kV (2 x 75/125 MVA, MTS #3)

EXPERIENCE

Elecsar Engineering is a specialized organization with project and analytical capabilities in the areas of transmission, small generation, transformer station and distribution facilities.

The principals and senior staff represent over 400 years of accumulated experience in industrial and utility electrical systems.

In its 29-year history, Elecsar has been responsible for design, specification or procurement of:

- 230kV/15kV substations and equipment;
- 4,000,000 kVA power transformers to 345kV;
- 2,100,000 m of utility/industrial distribution to 44kV;
- 500,000kW of induction/synchronous motor drives;
- 2,900 cells of metalclad switchgear to 35kV;

In association with specialized firms, Elecsar has contributed its expertise to projects and studies with a wider scope.

EXPERTISE

Elecsar has developed a capability and a reputation in particular areas of electrical systems such as:

- Design and engineering for many indoor transformer station facilities, with MV switchgear to 35kV, transformer stations up to 230kV involving conventional and gas insulated equipment;
- Development of integrated substation relay and control systems, including very high speed fibre linked electronic relaying systems;
- Design of thermally efficient, mechanically secure underground cable systems;
- Engineering and co-ordination of facilities design to meet safety and maintenance objectives;
- Development and refinement of electrical system models to provide a realistic analysis for rotating machine and protective relay response;
- Development of station auxiliary system standards to improve or enhance reliability, ease of operation, environmental responsibility.

APPROACH

Elecsar projects are characterized by some fundamental approaches:

- facilities are designed for real situations;
- facility options should address local conditions and constraints;
- field assembly should be a minimum to improve accuracy, reliability and construction schedule;
- design and equipment detail must be accurate and committed to client records;
- site inspections by qualified personnel are an investment in quality.

HIGH VOLTAGE PROJECT ENGINEERING

Elecsar's diverse project experience includes engineering design, procurement and construction, related to dual-element power systems, co-generation systems, integrated computer control of systems, and retrofits to existing utility and industrial systems. All project designs are for the stringent reliability required by process industry. We believe these constraints to be at least equal to those determined by municipal utilities.

KEY PERSONNEL

Our principals are experienced in the particular concerns of high voltage supply design, operation and maintenance. Technical and administrative responsibility for project work would be undertaken by the Elecsar principals.

Mr. D. G. McGarry, C.E.T., President and Operations Manager, brings a wealth of expertise (over 45 years) in the fields of control, relay and operation for high voltage electrical systems. In recent years with Elecsar, his expertise has been proven in technical negotiation with supply utilities, in detailed facility design and in providing operational training for transformer stations and complex electrical systems.

Mr. M. Sopol, P. Eng., Engineering Manager, provides technical support through 18 years combined experience in industry and with Elecsar. With Elecsar, Mr. Sopol has been involved with the detailed design of 230kV substations, various P & C, and field construction. In the petrochemical industry he has worked on PCS and maintenance projects, electrical planning, design for hazardous area classification as well as electrical distribution projects.

Mr. W. O. Schwarz, C.E.T., has more than 40 years experience managing teams in the commissioning, and co-ordinating of major high voltage electrical projects, as well as maintaining and upgrading equipment.

Mr. A. Cairns, B.S.E.E., a recent graduate, gaining experience in HV electrical systems and has worked on projects including the design, construction and commissioning of a renewable generating station. He has experience in programming and testing microprocessor relays.

ADDITIONAL PROFESSIONAL RESOURCES

The following list of individuals represent a variety of expertise from full careers in Ontario Hydro and industrial settings. These engineers are located in various locations in Ontario.

Mr. D. Elash, P.Eng., has more than 35 years experience in business management (Federal Crown Corporation), public utilities (Engineering and Operations Mgr) and Petrochemical (Refinery Chief Electrical Engineer). He has experience in the design, construction and project management of a 115/230kV DESN TS and 16kV distribution systems. Mr. Elash has also developed long range master plans/budgets and negotiated an agreement with the First Nations. He currently resides in London, Ontario.

Mr. A. W. Beck, P.Eng., has more than 40 years experience in high voltage electrical systems at generating and transformer stations in design, commissioning and maintenance. He has managed a large staff of engineers and technologists. Mr. Beck lives in the Ottawa area.

Mr. C. Rennick, P. Eng., has 34 years of experience managing engineering/maintenance teams at Westinghouse Canada, TME-Delta Inc. and Ainsworth Inc. He has supervised the rewind of large induction and synchronous motors for utilities, automotive plants and petrochemical plants. Mr. Rennick has conducted engineering and business audits at a number of manufacturing plants. He currently lives in the Bobcaygeon – Peterborough area.

Mr. K. Schleihauf, is a seasoned professional with 30+ years of experience as a Protection and Control Technologist with Ontario Hydro. Mr. Schleihauf is familiar with wholesale revenue metering, transmission station relay protection schemes and remote control equipment. He is experienced at programming and testing microprocessor relays as well as commissioning procedures at utility and industrial substations.

Mr. R. K. Walker, P. Eng., has more than 40 years of experience in a broad range of engineering and management projects. His expertise is focused on Telecommunications, Electrical Power and Energy Efficiency, and includes a designation as a Consulting Engineer with a focus on project management and outcomes evaluation. His experience in consultations and inspections and in technical education and training has established a reputation for effective communications at all levels, especially in multi-discipline situations. Mr. Walker resides in the Barrie-Orillia area.