



AREAS OF PRACTICE

Management of Electrical Project Design, Construction and Commissioning
Power Systems including Standby Generators, and UPS Power
Control Systems including Variable Speed Drives
Electrical Instrumentation, SCADA systems, and PLC Controls
Utility paralleling systems
Security Systems
Nurse Call & Fire Alarm
Large Motor Installations (15,000 hp)

PROFILE

Randy provides prime consultant and electrical engineering services for complex hospital emergency power generation projects. His project experience includes projects for many of BC's largest hospitals including the Vancouver General Hospital, Surrey Memorial Hospital, Royal Jubilee Hospital, St. Paul's Hospital, Richmond Hospital and Burnaby Hospital. Randy has been a registered member of EGBC since 1971.

EDUCATION

Bachelor of Science, Electrical Engineering, University of Manitoba 1969

PROFESSIONAL AFFILIATIONS

Association of Professional Engineers and Geoscientists of BC APEGBC
Institute of Electrical & Electronic Engineers IEEE
Canadian Healthcare Engineering Society CHES

CAREER

Principal, Project Manager AG Engineering Ltd. 2012 - Present
Principal, Project Manager, Department, GENIVAR 2008 - 2012
Principal, RFA Consulting Electrical Engineers Inc. 1993 - 2008
Chief Electrical Engineer, Libya, Brown & Root Ltd. 1985 - 1993
Chief Electrical Engineer Kilborn Engineering Ltd. 1983 - 1985
Assist. Chief Electrical Engineer, Bechtel Canada Ltd. 1981 - 1983
Sr. Electrical Engineer, Kilborn Engineering Ltd 1980 - 1981
Sr. Electrical Engineer, Oasis Oil Co. of Libya 1978 - 1980
Electrical Engineer, Buildings, BC Tel (Telus) 1976 - 1978
Electrical Engineer, Universal Dynamics 1971 - 1976
Electrical Engineer, Westroc Industries 1969 - 1971

PROFESSIONAL EXPERIENCE

HEALTH CARE POWER SYSTEMS

→ **Richmond Hospital, Richmond BC**, Overall Project Manager and electrical engineer of record for the electrical upgrade of the site electrical system. Project included a new electrical service building, ground improvement new 25 kV BC Hydro service, 600 V & 208 V distribution, 3 X 800 kW generators and closed transition ATSS. Project construction cost \$13M. Completion 2018



- **Surrey Memorial Hospital**, Upgrade 5 kV and 600/208 V electrical distributions for 4 patient care facilities at the Hospital campus. Project construction value \$4M. Completion 2017
- **East Kootenay Hospital**, Cranbrook BC, replacement of the complete main electrical distribution and upgrade system from 208 V to 600 V. Provide new main 25 kV service new 2 X 750 kW generators, new UPSs, new 600 V closed transition ATS and new 600 V and 208 V distribution. Completion 2015
- **Kootenay Lake Hospital, Nelson, BC**, Prime Consultant, , replacement of the existing 400 kW and ATS with new 2 X 750 kW generators, new 600 V closed transition ATSs and new 600 V and 208 V distribution. Completion 2015
- **Burnaby Hospital**, Burnaby BC, Prime Consultant, replacement of existing emergency power system, new 2 X 1000 kW generators, new 600 V closed transition ATS and new 25 kV incoming main breaker replacement. Completion 2014
- **Sunnybrook Hospital, Generator Replacement**, Toronto, ON Owner's Engineer, 4 X 2000 kW 5kV generators, 2 closed transition soft transfer ATSs
- **Queens Park Hospital**, New Westminster BC, Prime Consultant, replacement of existing emergency power system, 600 kW generator, new 600 V closed transition ATSs (2), new 25 kV incoming main service entrance switchgear and transformer. Completion 2014
- **St. Paul's Hospital Electrical Infrastructure Replacement**, Vancouver, BC, 4 X 1000 kW generators, 2 closed transition soft transfer ATSs with load generator load test feature to allow testing using hospital load. New 3 X 2500/3750 kVA transformers and 25 kV & 600 V switchgear. Completion 2014
- **Surrey Memorial Hospital Power System Modifications**, Surrey, BC, upgrade of 25 kV and 5 kV distribution system to allow connection of new Critical Care Tower, new 25 kV & 5 kV switchgear, building modifications, new underground services, modifications to existing switchgear and generator controls. Complete 2012.
- **Surrey Memorial Hospital Generator Load Testing System**, Surrey, BC, upgrade of generator control system to allow individual generators to be load tested using Hospital load. Complete 2012
- **Surrey Memorial Hospital Emergency Power System Replacement**, Surrey, BC, renovation of existing Energy Centre and provision of 2 X 2800 kW generators with 5 kV closed transition soft transfer ATS, 2 X 6 MVA 25 kV – 5 kV transformers and 5 kV switchgear
- **Royal Jubilee Hospital Emergency Power System Replacement**, Victoria, BC, renovation of existing generator room and new Energy Centre, new 25 kV switchgear, 2 X 9 MVA 25 kV – 5 kV transformers, 2 X 3000 kW 12 kV generators, 12 kV closed transition soft transfer ATS with load test feature, 25 kV, 12 kV and 600 V switchgear
- **Jim Pattison Outpatient Care and Surgery Centre**, Surrey, BC new power system with 25 kV service, 2 x 2000 kVA transformers, 2 X 600 kW generators with closed transition ATSs (2)



- **Chilliwack Hospital Generator System Replacement**, Chilliwack, BC, renovation of existing generator room with new 2 X 750 kW diesel generators, and new closed transition ATSS
- **Royal Jubilee Hospital Generator Upgrade**, Victoria, BC, renovation of existing generator room and new Energy Centre, new 25 kV switchgear, 2 X 9 MVA 25 kV – 5 kV transformers
- **Eagle Ridge Hospital Electrical Upgrade**, Port Moody, BC, new 25 kV service upgrade with new 25 kV – 600 V outdoor 1500 kVA transformers, new 600 V switchgear.
- **Saanich Peninsula Hospital, Electrical Upgrade, Saanich BC**, replacement of complete electrical system including 25 kV main service, new 2 X 750 kVA transformers, new 600 V distribution, new closed transition ATSS (2) and new 2 X 400 kW outdoor generators
- **St. John Hospital Electrical Infrastructure Upgrade, Vanderhoof, BC**, new replacement generator and new site power system, new outdoor 400 kW diesel generator and 600 V & 208 V switchgear
- **UBC Hospital, Emergency Power System Replacement, Vancouver, BC**, new 2 X 1100 kW generators replaced in-situ with new closed transition soft transfer ATS, replacement of existing distribution to two other Hospital buildings
- **Vancouver General Hospital Standby Power Plant**, Vancouver, BC 4 x 1600 kW 12 kV generators, 2 X 12 kV closed transition soft transfer ATSS with load test feature to allow generator load testing using hospital load
- **Royal Columbian Hospital 12 kV Service Upgrade**, New Westminster, BC, new 12 kV service and new 750 kVA unit substation
- **Vancouver General Hospital Energy Centre**, Vancouver, BC
- **Vancouver General Hospital Steam Plant Generator**, Vancouver, BC
- **Fraser Health Authority Hospital Master Plan**, various sites
- **St. Paul's Hospital Emergency Power ATS Replacement**, Vancouver, BC
- **Kelowna General Hospital Emergency Power System Upgrade**, Kelowna, BC
- **Victoria General Hospital Electrical Distribution Upgrade**, Victoria, BC
- **Burnaby Hospital Electrical Distribution Phase 1 Upgrade**, Burnaby, BC
- **Vancouver General Hospital LSP1/LSP2 Essential Power**, Vancouver, BC

INDUSTRIAL POWER GENERATION

- **100 MW Sarir Power Generation Plant**, North Africa - 6 x 17 MW Westinghouse W191G, Natural Gas/Diesel 11 kV-66 kV Substation, control centre, radio communications.
- **25 MW Gialo Power Station, North Africa** - 1 x 25 MW GE Frame 5, Natural Gas, 13.8 kV Operation 138 kV Substation.
- **25 MW Defa Power Station**, North Africa - Natural Gas 1 x 25 MW GE Frame 5, Natural Gas, 13.8 kV Operation 138 kV Substation.
- **1.4 MW El Sidra Power House Gas Turbine Addition** 1 x 1.4 MW Ruston GTG, Crude Oil 4.16 kV Operation.



engineering

consulting electrical engineers

R.B. Arnett, P.Eng.

- **12.5 MW Brega Power Station, North Africa** - 5 x 2.5 MW Fuji Diesel Generators, Diesel Fuel, 11 kV Operation.
- **22.5 MW Sarir Power Station, North Africa** - 5 x 4.5 MW Fuji Diesel Generators, Diesel Fuel, 11 kV Operation.
- **Hartley Bay** - 3 x 400 kW, power system for First Nations Village

COGENERATION

- **Vancouver General Hospital** - 2 x 1.5 MW Steam Turbine - 12 kV Parallel B.C. Hydro Operation
- **Westport Innovations Inc.** - 1 x 2.0 MW Diesel Generator - 12 kV Parallel B.C. Hydro Operation
- **DND - CFB Esquimalt** - 2 x 1.75 MW Static Power Converters Parallel to B.C. Hydro - 4 Quadrant Type for submarines

INDUSTRIAL FACILITIES

- **Westroc Industries Fiberglass Insulation Manufacturing Plant, Vancouver BC**
- **Cache Creek, BC Lime Plant & 69 kV Substation**
- **Bingham Willamette, Burnaby, BC**, 15,000 hp Pump Test Facility & 69 kV Pump Station,
- **Telus Central Offices**, Victoria & Kamloops
- **CFS Aldergrove DND** communications facility
- **FMC Chemicals Squamish, BC**, 200,000 A Bus design for chemical reactors
- **Cyprus Anvil Mines Concentrator, Faro Yukon**, 18 kV substation & 3 MW Diesel Generator
- **Esso Byron Creek, BC Coal Plant & 69 kV Substation**
- **Arco Sohio Seawater Treatment Plant, Prudhoe Bay Alaska**, 69 kV undersea cables, & substation
- **Suncor Fort McMurray AB, Complete Site Protection Coordination Study**
- **Esso Chemicals Redwater, AB, Ammonia Urea Plant, \$400 M**
- **Gulf Oil Refinery Upgrade, Edmonton, AB, , \$200 M**
- **Suncor & Syncrude, Ft. McMurray, AB**, Hydrogen Plant Replacements, \$50 M
- **Pre-Stressed Concrete Plants (2), North Africa, \$200 M each**
- **Water Well Fields (2) North Africa**, 300 wells, 6 X 66 kV substations power lines and SCADA system
- **GVRD Westburnco Pump Station** 4 X 900 hp with VFDs & SCADA
- **CRD Victoria Sewage & water pump station & SCADA**, multiple
- **Saanich Pump Sewage and water stations**, multiple
- **Saanich Unified Water Treatment Plant**