



Thompson Project Management Inc

Daryn Thompson, B.A.Sc., P.Eng.
Specialist System Planning,
Smart Grid and Renewables

daryn@darynthompson.com
416-605-6819
www.darynthompson.com

SUMMARY OF QUALIFICATIONS

Daryn Thompson has more than 35 years' experience in consulting and utility engineering with experience in distribution and transmission asset management, risk management, system planning, smart grid, renewables, and climate change impacts. A strong technical background in distribution planning including long term master planning, asset condition assessment, reliability studies, feeder automation system planning and standards, development of the Market Rules, and Distribution Standards in Canada and the US.

Daryn has conducted many research studies leading to roadmaps, guidelines and reports on behalf of bodies such as various LDCs, CEATI and CSA. He has an active project, working with CSA, to develop a roadmap for the development of standards relating to Micro-Grids, a project which includes interviewing stakeholders, reviewing the regulatory landscape, and identifying gaps in the current standards status.

Many customers are concerned with the impacts of Electric Vehicles, Electrification of Heating and other NetZero directives which will dramatically alter the electrical system. So thoughtful review of the alternative can lead to an organized approach to future needs.

Daryn has completed many other studies and guides including benchmarking studies and best-practice development guides for CEATI interest groups, including Resiliency and System Hardening, Station Health Index, Costs of Outages, and Safety standards, and more ongoing projects.

July 2023 to Present

Independent Consultant – System Planning

Working through various partner firms and directly with utility clients, continuing to apply System Planning skills to various projects.

Smart Grid Roadmap and (Net Zero) System Planning

- Welland Hydro DSP Guidance and Support
- DND Goose Bay System Plan (on-going)
- DND Halifax System Plan (on-going)
- GTAA (Pearson Airport) Medium Voltage System Plan
- DND Cold Lake System Plan (on-going)
- DND Esquimalt System Plan (on-going)

July 2014 to June 2023

Specialist/Department Leader - METSCO Energy Solutions Inc.

Managing projects and leading engineering teams in research and developmental projects in Distribution System Planning, Smart Grid and Asset Management. Projects include:

Smart Grid Roadmap and (Net Zero) System Planning

- FortisAlberta DFO Roadmap Study (on-going)
- Ottawa River Power Corporation Planning Study (2023)
- Westario Power Inc System Plan – Walkerton, 2022
- Elexicon DA/CVR Study and ICM Support (2022)
- Toronto Hydro Load Forecast and EV Study (2021)
- Nova Scotia Power – Asset Management System Study (2021)
- Energy+ Cambridge – Control Room Study, 2021
- Westario Power Inc System Plan - Kincardine, 2021
- EPCOR System Planning Policy Review, 2021
- Advisor to the Ontario Ministry of Energy for projects completed under the SmartGrid fund.
- InnPower Corporation, System Plan, 2015-2016
- Entegrus Powerlines Inc., SmartGrid/System Plan, 2016
- Festival Hydro, Updated Automation Plan, 2014
- Entegrus Powerlines Inc., Feeder Automation Project, 2017
- Medicine Hat, Feeder Automation Project, 2017

Regulatory Narratives/BCEs, ACAs, and Capital Plans for several utilities to support Rate Filing Requirements, including:

- FortisAlberta Regulatory Support and Business Cases (2022)
- Toronto Hydro – Developer's Guide (2022)
- Elexicon ACA, 2019
- Peterborough Utilities, Distribution System Plan (DSP), 2019
- Algoma Power DSP, 2018
- Burlington Hydro DSP, 2018
- Festival Hydro ACA, 2018
- Kitchener Wilmot Hydro ACA, 2018
- Veridian Connections Inc. DSP, 2018
- Chapleau Public Utilities DSP 2018
- Kingston Utilities Metrics and Benchmarking, 2018
- Essex Powerlines Corporation, Distribution System Plan, 2018
- Northern Ontario Wires, Distribution System Plan, 2016
- Welland Hydro-Electric System Corp., Distribution System Plan, 2016
- InnPower Corporation, Distribution System Plan, 2016
- Ontario Energy Board, DSP Review, 2015
- Entegrus Powerlines Inc., Distribution System Plan, 2014-2015
- Hydro Ottawa, Asset Health Index Validation, 2014-2015
- Guelph Hydro, Distribution System Plan, 2014-2015
- Whitby Hydro, Distribution System Plan and ACA, 2014-2015
- North Bay Hydro, Distribution System Plan and ACA, 2014

Development of Various Guides and Studies for CEATI

International including:

- CEATI 50164: Distribution Planners Manual
- CEATI 50154 – Innovative Techniques to Reduce O&M Costs
- CEATI 50149 – Impact on Worker Safety of DERs
- CEATI 50118 – Health Indices: A Simplified Methodology
- CEATI 30120 – Understanding the Key Factors, Weightings & Prioritization Factors of Health Indices
- CEATI LSMSEA 30110 – Substation Resiliency and Climate Change
- CEATI LCMSEA 30109 – Substation Diagnostics Center
- CEATI DLAM 50136 – SmartGrid Rollout Plan
- CEATI 3089 – Safety in Substations

- CEATI 3087 – Station Equipment Outage Costs
- CEATI 3097 – Station Health Index

Distribution Engineering and Streetlighting

- London Hydro – Arc Flash Study (2022)
- Lakeshore Gold – Arc Flash Study (2022)
- Sudbury PUC, Kathleen MS, 2018
- HONI One Distribution Strategic Plan, 2017
- Newfoundland Power, Downtown System Plan, 2017
- InnPower, Cedar Point MS Rebuild, 2016
- InnPower, Distribution System Plan, 2016
- City of Markham, Parking Lot Streetlight Conversion
- City of Markham Streetlighting Condition Assessment
- InnPower, Substation Assessment 2016
- InnPower, System Planning Study 2017

2009 to 2014

Director Technical Services, S&C Electric Toronto

Responsible for PSS group, including Engineering Projects, Automated Systems Projects, Field Services and Training. Major Projects include:

Smart Grid:

- Manitoba Hydro, Waverly West Automation System.
- Kitimat Rio Tinto, Campus Grid and Automation.
- Toronto Hydro – IntelliTeam II Pilot Installation 50 intelligent devices, Studies, Factory Acceptance, Site Coordination, Training (on-going)
- Veridian – IntelliTeam II Pilot Installation 18 intelligent devices, Studies Installation Standards, Installation Supervision, Commissioning, Training
- Brant County, Ontario, -- System Overview Study including reliability and automation.
- Niagara on the Lake – System Automation Implementation.
- Festival Hydro Stratford Ontario, -- System Overview Study including reliability and automation analysis.
- Fortis – IntelliTeam II Installation 30 intelligent devices, Studies Commissioning, Site Acceptance and Service, Training
- ENMAX – IntelliTeam II Installation 25 intelligent devices, Studies Commissioning and Service, Training.

Renewables and Substations:

- Goulais Wind Farm Interconnection --Engineering Design and Procurement
- WEICan Energy Storage Project – EPC
- BC Hydro Energy Storage Project – Commissioning and Service
- Halkirk Windfarm DSTATCOM – EPC
- Multiple Windfarms DSTATCOM – Commissioning and Service, (Ontario Projects, Point Aux Roche, Demoristville. BC Projects, Cape Scott. Quebec Projects, Saint Robert Bellamin, Massif du Sud, Lac Alfred. Alberta, Quality, Blackspring Ridge)
- First Solar – Seven Solar Farm HV Connection and Protection and Control Turnkey. Including Design Procure and installation.
- Gosfield Windfarm – 230 kV Substation, Project Sponsor 200MW connection and collector system, EPC.

2006 to 2009**Regional Manager Eastern Canada, Hatch T&D(Acres Intl)**

Specialist in management, planning, design, and construction of electrical power systems. Major projects include:

- System Impact Assessments –AEP in Pittsburgh, staff of 2 running SIA studies over a 6 month period on behalf of System Operator
- 240kV Switchyard and Cable Terminations -- Confidential Generation Client, Project Manager
- Static Var Compensator (SVC) Design -- Hydro One 13.8kV Substation, Project Manager
- System Impact Assessments -- Nova Scotia Power.
- Substation Design -- Vale Inco, 69kV Substation, Project Manager
- Connection Impact Assessments -- Hydro One,
- Condition Assessment – NYPA. Assessment of equipment associated with 30 breakers, report on condition and suitability for on-going use.
- Asset Condition Assessment – Hydro One. Condition assessment and health indices for 43 asset classes and Audit Report.
- Asset Condition Assessment – Hydro Quebec. Condition Assessment for 30 stations, including demographics, visual condition data, and health indices for 19 asset classes.
- Distribution System Planning Report – Great Lakes Power. Planning study for distribution system including fuse coordination and reliability recommendations in Northern Ontario.
- System Plan for distribution system extension including capital estimates, system performance and reliability in Caledon, Ontario.
- Feasibility study for distribution system rehabilitation including field survey and assessment of distribution systems including capital investment estimates, load forecasting and system modeling in Vietnam (3 week field data gathering trip to Hanoi Vietnam)
- Design of the electrical overhead distribution system for the Community of Natuashish (Davis Inlet Inuit) comprising sub-transmission, distribution, secondary and street-lighting systems for 200+ homes and community facilities.

2003 to 2005**Distribution Engineer, Hydro One Lines, Contract**

- Distribution Standards – Hydro One Lines. Distribution Engineer, Engineering Lines Dept, including reclosers, fault indicators and complete Underground Standards.

2001 to 2003**Acres International and Independent Consultant**

- New Brunswick Market Rules Review – J.D. Irving. Review and commentary, Proposed Market Rules.
- Contract Management Process Audit, IESO – Mississauga. Risk assessment and report on contract management process.
- Retail metering and billing survey. Circulated survey questionnaire to general managers of municipal utilities, collected data, analyzed responses, sorted and prepared draft and final reports for Market Design Committee.

1999 to 2001**Build Cycle Manager, IESO, Contract**

- Development of Market Rules, co-ordination of rule development and ensure approvals in place for ultimate Minister of Energy Approval (under Bill 35). Specific technical involvement to date include: rules for dispatch of load or generation, dispatch data requirements, contingency trading rules, records, interconnections, etc.

1998

Distribution Engineer, West Kootenay Power, Contract

- 10 year Master Plan Report for West Kootenay Power. Responsible for base system analysis, options identification, cost of losses evaluation, cost of reliability evaluation, optimal system configuration, economic evaluation of alternatives, project listing and rankings; used Scott and Scott Analysis software to identify voltage drop, and losses, Fuse co-ordination study for West Kootenay Power. Application of fuses, breakers and reclosers.

1989 to 1998

Distribution Engineer, Toronto Hydro (York Hydro)

Responsible for design, project management, planning, records and technical support. Represented York Hydro on all technical committees. Manager of design staff.

- Distribution Standards, Overhead and Underground
- Project management for projects, including: AM/FM , SCADA .
- Design and project management of capital projects. Drawing preparation, estimating and material tendering and acquisition, contract tendering/administration and safety.
- Reliability analysis and tracking, incident investigation, annual reliability indices/cost of outages reports.
- Subdivision planning and design, Major Projects including, Charlton Developments, West Side Mall, and others.
- System planning including, identification of system issues, identification and analysis of planning options, and project funding. York Hydro/North York Hydro/Ontario Hydro Joint Local Integrated Resource Plan (LIRP) for the Downsview area.
- Design and Maintenance of Streetlighting System

1988 to 1989

Project Engineer, Ronald T Gayowsky Ltd.

Design and project management for underground subdivision projects, overhead connections, street-lighting systems and distribution master planning. Hundreds of projects completed in Mississauga, Oakville, Newmarket, Pickering, Ajax, Ancaster, Dundas, Burlington. Major developments include:

- Mississauga Heartland Industrial Commercial area, Erin Mills Developments, Daniels, Hurontario Industrial developments,
- Newmarket, Glenway Golf Course and Subdivision, Daniels,
- Oakville, River Oaks, phase 3-6, Winston Business Park

**Selected
Technical
Publications &
Presentations**

Health and Risk Index Tool for Stations CEATI Report No. T133700-3097 (LCMSEA) , November, 2015

Safety in Substations

CEATI Report No. T133700-3089 (LCMSEA) November, 2014

Station Equipment Outage Costs

CEATI Report No. T133700-3087 (LCMSEAIG) September, 2014

<<Draft Note: Plus maybe a dozen others>>

CAREER HISTORY

Career Summary

2018-On-going: Independent Consultant: – Specialist in Capital Planning, Smart Grid, Renewables, Energy Storage and Climate Change Impacts– Various Clients including: Greater Toronto Airport Authority, Fortis Alberta, Department National Defence, Alectra, Elexicon and Ontario LDCs.

2014-2018: METSCO – Vice President Ontario LDCs Sector – Department Head, ACA and System Planning, Senior Expert and Mentor.

2009-2014: S&C Electric Canada – Director of Power Systems Services, -- Smart Grid, DER Interconnections, Asset Management, Parts and Services.

2006-2009: Hatch Energy (form Acres Int.) – Director of T&D Eastern Canada, Regional Lead for Business Unit, Proposals, Project Management and Profitability, Distribution Planning and Asset Management.

1998-2006: Acres International (Contract) – Senior Engineer, Independent Contributor, System Planning, Distribution Engineering. For two years was Build Cycle Manager for Market Rules at the IESO.

1989-1998: York Hydro- Distribution Engineer, Led small team, Distribution Engineering, SCADA deployment, GIS deployment, Design and Standards

1988-1989: RT Gayowski Ltd: Distribution Engineer -- Designer

Education

University of Toronto, Ontario

- B.A.Sc. Electrical Engineering, 1984

Professional Associations

Licensed Professional Engineer, Ontario, Canada