Ahmed Abdelmaksoud, Ph.D., P. Eng.

Canadian Citizen, Professional Engineer of Ontario

PROFESSIONAL SUMMARY

- 15+ years work experience in Electrical, Power and Energy Engineering.
- Professional Engineer of Ontario, PEO: 100514905
- Part-time Professor, School of Engineering Technology & Applied Science (SETAS), Centennial College, Ontario, Canada, and Associate Professor, Faculty of Engineering, Zagazig University, Egypt
- Approval of Canadian Bruce Power and Ontario Power Generation (OPG) Site Security Clearance with SCS# 1107306
- Advanced knowledge of Ontario Electric Safety Code (OESC), Ontario Building Code, TTC standards, CSA standards and other applicable codes and standards
- Expert in electrical engineering, electric power systems operation, power system reliability, instrumentation, control systems, problem solving and modeling skills
- Experience in distribution system operation and planning: power flow, short circuit, lines upgrades, renewable energy, protection coordination, protective relays, smart grid technologies
- Experience in design of AC & DC power distribution systems: protection, control, electric circuit simulation and analysis, and electrical metering systems
- Experience in distribution system design, power electronics, and substations, power transformers, Circuit breakers, Motor Control Centers (MCC)
- Experience in high voltage power transmission (230kV, 500kV), insulators, power/standby generators, excitation system, generator protection schemes and systems.
- Capability of preparing the projects scopes: preparing the CBS (Current Best Schedule), the CBA (Current Best Approach), and the BOQ (Bill of Quantities) of projects.
- Capability of preparing engineering packages and design review based on project tender documents
- Develop detailed requirements and documents with manage requirement changes by DOORS
- Proficient in PSCAD, CYME, ETAP, EPLAN, EMTP, PSPICE, power flow and short circuit software, Microstation CADD, AutoCAD, MicroStation, SolidWorks GridLAB-D, and OpenDSS
- Advanced knowledge and understanding of National and Internationals codes and standards: Canadian Electrical Code, CSA standards, National Electrical Code (NEC), IEC standards, UL standards, IEEE standards
- Proficient in modeling and optimization software, such as Matlab, Simulink, Multisim, GAMS, AI: Artificial Intelligent, and multi-agent platforms
- Experience working as an assigned design engineer (ADE) and owners engineer (OE) in multinational industrial corporations.
- Four patents through United States Patent & Trademark Office (USPTO) about smart power distribution systems, smart energy storage systems and electric vehicle technology

EDUCATION

- Ph. D. Degree in Electrical Engineering, Aalto University, Finland (formerly: Helsinki University of Technology)
- B. Sc. and M. Sc. in Electrical Eng., Zagazig University, Egypt (Excellent with honor)
  All Credentials assessed and approved in CANADA by ECA/WES

PROJECTS AND ACHIEVEMENTS

- Two Canadian standard Association (CSA) funded projects: “Technical requirements for the development of Battery Management Systems (BMS) Standardization”, and “Design of testing platform for Connected Autonomous vehicles (CAV)”, collaborated with Ontario Tech University
- Design of efficient Energy Storage systems for Oshawa Power Utility Co. (OPUC) at Power Grid MV Substation (MS9 substation)

- Partnership project, between OnTechU and OPG, to design energy storage system to supply electricity to OPG facility at Pickering during decommission.
- Industrial project with MOBISMART Mobile Off-Grid Power & Storage Inc. with project: "Resilient Flywheel-Based Energy Storage Platform for Power Substations and Transportation Electrification"
- Industrial project with TRANSPORT CANADA (TC) on Canadian Urban Transit Innovation Consortium (CUTRIC) Funding: "Flywheel Energy Storage Platform (FESP) for Energy Efficient Transportation Buses with Trip Route and Charging Station Management"
- NSERC Engage project with industrial partner: Alternate Power International Ltd., "Design Optimization and Verification of Integrated PV with Flywheel-Based Fast Charging".
- Collaborative Research and Development (CRD) Project: (NSERC) with Ontario Centers of Excellence (OCE): with industrial partner: EverForce Energy Co.: "Testing Platform for Performance, Reliability and Safety Verification and Validation of Clean Energy Technologies".
- NSERC Engage Project: with industrial partner: EV Fern Ltd, "Wind-PV-Battery Integration and control system".
- Fortum Foundation, Finland, for analyzing, designing, and enhancing Helsinki power grid.
- MathWorks software development Award, Finland.

PROFESSIONAL EXPERIENCE

Oct. 2021- Till now: Electrical Design Consultant for Hitachi Ltd. on project of Hurontario Light Rail Transit, Brampton, ON. Responsibilities:

- Reviewing and approving the designs and system integration activities comply with ISO/IEC 15288 and are based on the V-model approach of the EN 50126 throughout the Project, incorporating preliminary design, equipment procurement, and construction for factory acceptance tests, installation, on-site testing, trial running, and operations and maintenance.
- P.Eng. verification, reviewing and stamping for expanded/adjusted incrementally at 90%, 100% design stage for Signaling and Train Control System (S&TCS), Interlocking (IXL), CBTC core (CBTC), Automatic Train Supervision (ATS).
- Ensure the progression of Signaling engineering activities such as requirements, interface definitions, implementation of hardware and software, execution of tests, manage defects related to Signaling
- Supports the Systems Manager for this specific portion of the project and coordinate the definition and implementation of the assigned Work Packages
- Reports about time, cost, and quality of the relevant output to the relevant Project Team Members (Systems Manager, PM, Commissioning Manager, Construction Manager)
- Supervision of the design and commissioning activities performed by the suppliers/subcontractor.

Jan. 2020- Till now: Part time Professor, Electrical Power Engineering, Centennial College -
(School of Engineering Technology & Applied Science (SETAS)), Toronto, ON

Jan. 2021– Dec. 2021: Electrical Design Team-Lead at ATS Automation Systems - Cambridge, ON: Design Team Lead with P.Eng. review, and machine design experience (instrumentation and controls vs. power systems). The duty to manage / lead a team of electrical designers/engineers, plan day to day work activities in accordance with project schedule requirements. In addition, to manage challenging design projects under tight schedule. work with other disciplines to meet overall project goals, execute daily visual management process for real time progress tracking and issue identification.
Responsibilities:

- Carry out with the assigned team, all engineering and design works of electrical power projects.
- Responsible for the correctness, quality, and cost effectiveness of electrical work on projects.
- Stay current with applicable Department, Discipline and Project procedures
- Ensure that work is executed in accordance with sound engineering principles, the Project
- Execution Plan, Project Engineering Plan, the contract, and established procedures and practices.

- Ensure that engineering deliverables (e.g., drawings, specifications, analysis) comply with applicable government regulations, standards, and sound engineering practices.
- Coordinates with the Discipline manager to conduct peer reviews of deliverables as required.
- Ensure that required reviews and approvals are provided and documented.
- Engage Discipline Senior Engineers as required and mentoring junior engineers.
- Review project man-hour estimate for required activities and controls work.
- plan and schedule project work of the discipline to meet project schedules, monitor progress and man-hours used, and report regularly to manager on project status.
- Provide input into improvement ideas during project execution and close-out.

Feb. 2020– Jan. 2021: Electrical Engineer at Toronto Transit Commission (TTC), **Toronto, ON:** at One Time Work Order Design Section (OTWOD) with rule book certification, and knowledge of TTC organizational structure, operations, functions, and procedures applicable to the work performed.
Responsibilities:

- Design, including the calculations and the analysis for the layouts and designs for various projects and installations related to TTC facilities (building, facilities, garages, workshops, stations, …)
- Draft and draw design layouts, by Microstation and Projectwise platforms, based on TTC design standards and codes.
- Conduct analysis and studies incorporated with related reference drawings for structural details
- Collect the required data and information through field (site) visits for TTC facilities, including the research for the design information and standards.
- Prepare list of materials for designs based on the current conditions for the sites and specifications.
- Prepare the package for the approval of the designs construction to confirm the practicality of final designs based on TTC code and standards.

June 2016 – Feb. 2020: Electrical Engineer/Designer at GPROSYS Corp., North York, ON
GPROSYS Corp. – Green Production Systems (GPROSYS) Corp., a fast-growing company with years of experience in smart and clean energy grids and control systems for industrial, transportation, and residential sectors. Responsibilities and projects:

- Design power substation layout (MV/HV) with control and protection schemes
- Design power distribution panels and systems based on demand-side management (DSM)
- Design of efficient energy storage platform for OPUC Power Grid MV Substation
- Design and install Battery Management Systems (BMS) for industrial facilities
- Develop of resilient in-wheel motor system for electric vehicles
- Design, develop and install microgrids, clean energy systems for buildings and communities
- Develop smart building energy automation with battery management
- Design and install renewable energy solutions: solar PV panels, wind systems and batteries

June 2015 – March 2020: Senior R&D Researcher and Sessional Lecturer – Faculty of Energy Systems and Nuclear Sciences, at ESCL: Energy Safety and Control Lab, Ontario Tech. (OnTechU), Oshawa, Canada.

Feb. 2011 – June 2015: Associate Prof./Lecturer, Electrical Power and Machines Department, Faculty of Engineering, Zagazig University, Egypt

Feb. 2012 – May 2015: Senior Electrical Engineer Egyptian International for Development, Trade and Contracting (EIDTCo) Company, Egypt. Responsibilities:

- Design and supervision of the electrical networks and installations for projects and buildings (design and shop drawings), such as: power distributions, lighting installations, light Current networks as Fire Alarm, Sound system and CCTV system

- Prepare and supervision of the project's scopes: preparing the CBS (Current Best Schedule), the CBA (Current Best Approach), and the BOQ (Bill of Quantities) of projects.
- Prepare and review the engineering design package based on the project tender documents

Jan. 2009 – Nov. 2011: Project Engineer -HELEN SAHKOVERKKO OY, 110 kV electricity network, Helsinki, Finland. (Helen Group - one of the largest energy companies in Finland: electricity transmission and distribution in Helsinki - energy metering services).
Responsibilities:

- Remote monitoring and diagnosing of the performance of Helsinki power network.
- Troubleshooting for solving real problems in Finnish power grid operation.
- Develop and install modern electric devices and Artificial Intelligence (AI) systems
- Provide power and electricity solutions by assessment and data analysis

Feb. 2007 – Jan. 2009: Senior Electrical Engineer - Masriya Plaza Project, at Masriyah Tourism Development Co. – Zagazig City, Egypt.
The Project with Total Area: 55,000 m^2, Total Cost: 158 million Egyptian pounds. The project includes: A commercial mall (400 units), 4-Stars hotel (135 rooms), Private sports and social club (Olympic swimming pool, children swimming pool, courts, social building), Conference, Exhibition and festivals halls (4 halls), An Integrated Amusement city, A cinema center (6 cinemas), - Artificial lake (Waterfalls and jets), Romanic theatre (700 person), Food court (5 international brands), Public park (parks and restaurants).
Responsibilities

- Design and supervision of the electrical installations for buildings (design and shop drawings) and, prepare and supervision of the projects scopes: preparing the CBS (Current Best Schedule), the CBA (Current Best Approach), and the BOQ (Bill of Quantities) of projects.
- Designing, maintaining, and implementing electrical instruments, facilities, components, equipment products, or systems for industrial, commercial or domestic purposes.
- Performing engineering tasks by operating designs, engineering software and equipment.
- Ensuring that installation and operations conform to standards and customer requirements by preparing electrical systems specifications, technical drawings.
- Writing reports and compiling data for existing and potential electrical engineering projects.

March 2005 – Feb. 2007: Design and Technical Office Engineer - Proctor and Gamble (P&G) /Cairo Plant, Egypt. It is for engineering consulting and design specified in electrical engineering field achieving projects with other professional staffs in civil architecture, electrical and mechanical engineering.
Responsibilities:

- Prepare project scope baseline and updating the project time schedule
- Loading the project resources & BOQ Prices
- Submit the weekly look ahead & monthly progress reports
- Monitoring the "cash in" flow for project
- Attend weekly meeting between consultants, clients & subcontractor
- Prepare the construction schedule for the execution team
- Prepare the alternative plans for the Time Schedule to Recover Delay
- Making engineering plan for drawings, procurements "Subcontractors & Material"
- Design and prepare shop drawings and material technical submittals and
- Prepare invoices for clients & subcontractors and change orders & cost estimate for new items.

References available on request.