

SMULLIN ENGINEERING, INCORPORATED

Gary T. Smullin, P.E., Electrical Engineer
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ELECTRICAL POWER SYSTEM ENGINEERING SERVICES

Industrial and Commercial Customer-Owned Substations, Renewable Generation, Grid-Interconnections	In-plant Distribution Systems, Switchgear, Transformers, Circuit Breakers, Relays, Fuses, Cables, Capacitors, Reactors, Motors
Field Surveys, Testing, Phasing Problems	Emergency Generators and Backup Systems
Construction and Maintenance Technical Support and Commissioning Services	Transformer Winding Connections Switchgear Control Problems
Resolution of Unexplained Fuse, Relay, and Circuit Breaker Malfunction	Accident Investigations, Electro-Forensics, Loss Prevention, Reliability Assessment, Expert Witness

POWER SYSTEM ANALYSIS STUDIES

Short-Circuit for AC and/or DC Systems	Protective Device Coordination
Arc-Flash Hazard Analysis	Unbalanced and Single-Phase Systems
Large Motor Starting	Load Flow; Voltage Regulation
Power Factor Improvement	Energy Savings

Software: SKM/PTW - DAPPER, CAPTOR, Motor Starting, A_Fault, Arc-Flash Hazard, DC Systems, Unbalanced System and Single-Phase System Study Modules

- Forty-eight (48) years of experience in the design, failure analysis, and field testing/commissioning of industrial and commercial electric power distribution, generation, utilization, and protection systems.
- Power system design, power system studies (short-circuit, coordination, load flow, large motor starting, voltage regulation, harmonics, power quality, arc-flash hazard analysis), protective device schemes, specifications, equipment modifications, power system and apparatus testing and maintenance procedures, transformer connections & phasing issues, electro-forensics, and hands-on field engineering.
- Design of customer-owned substations and services, renewable generation grid-interconnections, overhead and underground distribution systems, power factor improvement methods, protection and control systems for switchgear, transformers, and machines to 14,000 HP.
- Projects include facilities and processes for air separation, chemicals, cement, data centers, paper, batteries, magnetic oxide, automotive components, ceramic tile, food processing, bakeries, packaging, healthcare, office/research/educational campus, power plant, photovoltaic, wind, turbo-machinery, integrated steel plants, rolling mills, machining, material handling/conveyors, quarries, foundries, and forging operations.
- Presentations on power system design, protection, voltage regulation, power factor, arc-flash, and system efficiency to various members of industrial, utility, and IEEE organizations.

PROFESSIONAL

Lehigh University - Bachelor of Science - Electrical Engineering -1970

Registered Professional Engineer - Pennsylvania - 1974

IEEE Life Member -

- * Power & Energy Society - Lehigh Valley Chapter Chair, Outstanding Chapter Volunteer Award
- * Educational Committee – Instructor and Organizer
- * Industry Applications Society - technical committees and working groups, "Red Book" and "Gray Book" Chair for Chapter 3 - Voltage Considerations, working group for the "Violet Book / Short-Circuit Calculations"
- * IEEE delegate to the ANSI Accredited Standards Committee C84, "Voltage Ratings for AC Systems and Equipment" - Standard C84.1
- * Working group for the "Yellow Book - Guide for Maintenance, Operation and Safety of Industrial and Commercial Power Systems"
- * IEEE Standards Assn - 1547 Working Group Member - Interconnection & Interoperability of Distributed Energy Resources with Associated Electric Power Systems

NSPE/PSPE - Lehigh Valley Chapter - Past President

Energy Association of Pennsylvania - Affiliate Member

Delaware Valley Power Quality Group (DVPQG) - Board Member, Past Vice President

International Association of Electrical Inspectors (IAEI) - Associate Member

Judge for Junior Solar Sprint - Technical Merit, Innovation - Phila. Solar Energy Assn.

EMPLOYMENT HISTORY & CLIENTELE

1996 - 2017	Smullin Engineering, Incorporated	President
Advanced Research Systems, Inc.	Agere / Lucent / LSI	Air Products & Chemicals, Inc.
Allentown Cement Co., Inc.	Apollo Metals	Blue Mountain Ski Area
Brigham and Trevor, P.C.	Buckeye Pipeline Partners	Cedar Crest College
Cigna Group Insurance	Consyst, Inc.	Crawford and Company
DeSales Univ. / Allentown College	Diefenderfer Electrical Contractors.	East Penn Mfg DEKA Batteries
Elliott Turbomachinery Co., Inc.	Erie Insurance Group	Fairchild / ON Semiconductor
F. L. Smidth / FFE Minerals, Inc. / Fuller Co.	Kevin T Fogerty Law Offices	Galfand Berger, LLP
Geisinger Medical Center	GEO Specialty Chemicals / Trimet	Info NXX, Bethlehem, PA
Hercules / RC Cement / Buzzi Unicem	Ironton Telephone Company	JR Peters, Inc.
Keystone Food Products, Inc.	Kraft Foods, Inc.	Lehigh Cement Company HTC
Lehigh Heavy Forge	Lockheed Martin Corporation	Mack Trucks, Inc.
Mazie Slater Katz & Freeman, LLC	Met-Ed / GPU / First Energy	Moravian Academy
Moravian College	Muhlenberg College	Nestle USA / Friskies / Purina
Northampton Generating / SEL Arc-Flash relays, Photo Sensors, Installation & Commissioning	New York Life	Northampton Comm. College
Phoenix Hot Form/Forging Co.	Raynes McCarty, Philadelphia	Saltz, Mongeluzzi, P.C., Phila.
Sands Bethworks, Bethlehem	SEPTA	Specialty Minerals, Inc.
St. Luke's Hospital	Stark & Stark, Attorneys at Law	STV, Incorporated
Tyler Pipe Industries, Inc.	Victaulic Co. of America	Whitehall / Lafarge Cement

1993 - 1996	BOC Process Plants (AIRCO)	Lead Electrical Engineer
1985 - 1993	Crowder Engineering, Inc.	Senior Engineer
1969 - 1985	Bethlehem Steel Corporation	Electrical Engineer
1966 - 1968	Fogarasi & Moyer; Bascom & Sieger	Land Surveying