

**Laurence C. Lehman, P.E.**  
**Lehman Engineering Company**  
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## I. Background

- Engineering Expert in Electric Power Systems & Energy for Utility, Industrial, & Facilities
- Licensed Professional Engineer (Virginia & Florida) / Electrical Engineer
- United States Citizen (Born in USA)
- 36 Years Experience / Seasoned Professional / Qualified Mentoring

## II. Education

- Georgia Institute of Technology    1974 - 1978    Bachelor of Electrical Engineering

## III. Areas of Engineering Expertise

### *Electric Power Distribution Systems:*

- Electric Utility (T&D), Industrial, Manufacturing, OEM's
- Facilities, Hospital, Commercial, Residential, Buildings
- High Voltage, Medium Voltage & Low Voltage / AC & DC
- Design, Construction, Operation, & Maintenance of Electric Power Systems
- Overhead Power Lines / Underground Distribution / URD / Substation / Transmission
- National Electric Safety Code (NESC) Practices
- National Electric Code (NEC) Practices

### *Power System Studies:*

- Short Circuit / Fault Calculations / Coordination
- Protective Relaying, Motor Starting, Voltage Drop, Flicker
- Harmonics, Load Flow, Power Factor, Arc Flash Hazard
- Network Grid System Modeling & Analysis
- Engineering Economics / Cost Analysis

### *Grounding & Overvoltage Protection:*

- Lightning Protection / Surge Suppression / TVSS / Insulation Coordination
- Grounding & Bonding - Systems & Equipment
- Substation Grids / Signal Reference Grids (SRG)

### **III. Areas of Engineering Expertise - *continued***

#### ***Electrical Safety / Code Application & Compliance:***

- National Electric Safety Code (NESC) Practices
- National Electric Code (NEC) Practices
- OSHA - 29 CFR Parts 1910 & 1926
- NFPA 70E - Standard for Electrical Safety in the Workplace
- NFPA 70B - Electrical Maintenance
- IEEE Standards / ANSI / ASTM (As Applicable)

#### ***Power Quality / Energy Management:***

- Computer Grade Clean Power
- Mission-Critical Facilities
- Energy Conservation and Efficiency / Demand Side Management
- Audits, Analysis, Troubleshooting, Problem-Solving

#### ***Reliability / Maintenance Technology:***

- PM, PdM, RCM, CBM, TPM
- Electrical Testing for Equipment & Systems
- Data Centers & Server Farms / ADP Rooms
- Emergency & Standby Generation Systems

#### ***Equipment Design:***

- Generators, Transformers, Motors, UPS's, Cable, Conductors
- Reclosers, Breakers, Sectionalizers, Relays, Fusing
- Switchgear, Panelboards, Capacitors, Filters, Arresters
- Wiring, Splices, Connectors, Pole-Line Hardware, Insulators

#### ***Quality Assurance & Control:***

- Plant Inspections, Surveillance & Audits
- Material Receipt Inspections & Testing Procedures
- QA/QC Programs Designed and Implemented

#### ***Expert Witness, Forensics, and Litigation Services:***

- Electrocution / Electrical Contact / Shock / Arc Flash Hazards
- Accident Reconstruction / Fire Investigations / Safe Work Practices
- Consulting & Research (Electric Power Systems)
- Articulate, Accurate, and Believable Testimony

#### ***Power System Training & Seminars:***

- Fundamentals Of Electrical Power Distribution Systems
- Modular, Half-Day Lectures on Six Important Power Topics
- Over 1000 People Have Attended From Major Corporations
- Off or On Site Training / Continuing Education Credit (CEU's )

#### ***Technical Marketing & Writing:***

- Specifications For Equipment Purchase / Standards and Procedures Written
- Marketing Brochures and Catalogs / Presentations (e.g. for Engineering Sales Meetings)

### III. Areas of Engineering Expertise - *continued*

#### ***Management:***

- Management Audits / Engineering Oversight / Project Management

### IV. Professional Work Experience

- ***Lehman Engineering Company*** 1993 - Present President / Chief Engineer  
Activities include power system design & consulting, short circuit, grounding, harmonic, & reliability studies, troubleshooting power system problems, development of electrical safety and maintenance programs, power seminar presentations, and expert witness testimony. Responsibilities also include all facets of business planning and technical marketing.
- ***First Energy / JCP&L / GPU*** 2001 - 2003\* Reliability Engineer  
Responsible for system protection parameters, and the engineering design of substation protective relaying and distribution protection schemes. Performed short circuit analysis, coordination, and reliability studies; established standards, application guidelines, and settings for programming, testing, and installation of relays, electronic reclosers, and fuses. (Note: \* - two 6-month engagements on Contract)
- ***Dominion Virginia Power*** 1987 - 1993 Senior Standards Engineer  
Responsibilities included engineering design of distribution switchgear equipment (OH & UG), reclosers, splices, terminations, & connectors. Activities included development of specifications, safety & construction standards, application guidelines, maintenance criteria, and selection & approval of vendors. Also, prepared economic studies for system design, performed quality assurance audits, testing, and failure analysis of materials.
- ***Florida Power & Light Co.*** 1980 - 1986 Senior Engineer - Design / Standards  
Responsibilities included the design & planning of distribution power lines (Overhead, Underground, URD), electrical installations (services, transformer vaults, etc.), street lighting, etc. Also served as a Standards Engineer in the corporate Distribution Engineering Department, which included same responsibilities as outlined above for Virginia Power.
- ***McGraw-Edison Company*** 1979 - 1980 Sales Engineer  
(Presently Cooper Power Systems) Responsible for the sales of electrical power equipment (transmission, substation, and distribution) to utilities in the State of Georgia (i.e. Oglethorpe Power, Savannah Electric, REA's, EMC's, municipalities, etc.) Duties included sales, technical presentations, forecasting, marketing, bid proposals, solving operational problems with equipment, establishing good communication lines between customers, factory personnel, electrical distributors, consulting firms, etc. Products sold included transformers, switchgear, breakers, reclosers, fuses, & surge arresters.

## **V. Professional Activities**

- Registered Professional Engineer VA #24170, FL #36826
- Senior Member of Institute of Electrical & Electronic Engineers (IEEE)
- Charter Member of Mid-Atlantic Power Quality Society
- National Society of Professional Engineers (NSPE)
- Senior Member of Association of Energy Engineers (AEE)
- Past Member of the Electrical League of Richmond
- Past Member of American Society of Testing & Materials (ASTM)
- Past Member of American National Standards Institute (ANSI-IEEE)
- Past Member of Florida Engineering Society (FES)

## **VI. Skills / Talents**

- Seminar Lecturer - "Fundamentals of Electric Power Systems" given onsite at:
  - NASA Langley Research Center, Hampton, VA
  - San Francisco International Airport, California
  - Power Distribution, Inc. (PDI), Richmond, VA
  - Graybar Electric Co., Inc., Richmond, VA
- Engineering Software Experience: CYME, ETAP, PSSE, GE SmallWorld, AutoCAD, et al
- Competent and Proficient in Use of Computers - IBM / Microsoft Based PC's  
(e.g. MS Word, Excel, Access, Publisher, PowerPoint, Lotus Notes, SAP, others)
- Effective Organizational and Planning Abilities
- Thoroughly Knowledgeable in Business and Project Management
- Experienced in Marketing, Sales & Customer Service
- Accomplished Public Speaker, Lecturer, Trainer, and Writer
- Excellent Communication Skills

## **VII. Contact Information**

- Address: P. O. Box 29160  
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