



John P. Nelson (S'73-M'76-SM-'82-F'97) with fellow citation: "for contributions to the protection of electrical equipment and to personnel safety in the petroleum and chemical industry." He received a BSEE from the University of Illinois (Champaign/Urbana) in 1970; MSEE from the University of Colorado (Boulder) in 1975 and performed post graduate work in business administration at the University of Colorado. From 1970 – 1976 he worked as a protection engineer and a senior protection engineer for Public Service Company of Colorado where he was involved with the design and implementation of protective relaying schemes for generation, transmission and

distribution systems. During that time period, he performed research on electrical insulation at high altitudes based on the Public Service Company of Colorado Leadville High Altitude (10,000 ft) test data. He also wrote his master's thesis on that subject. In 1977, John Nelson worked as a senior engineer in the Engineering Services Department where he worked on equipment standards and specifications. From 1978-1979, he worked as a senior engineer in the Fuel Supply Development Department where he was involved with coal, oil and natural gas procurement as well as being involved with research issues on alternative energy such as solar thermal and geothermal. From 1979-1984, he became a project manager and vice president for Power Line Models Inc where he was involved with the planning, design and construction of electrical generation, transmission and distribution projects. In 1984, he founded NEI Electric Power Engineering Inc where he continued providing consulting electrical engineering services for generation, transmission and distribution projects world wide.

Beginning in 1974, John began providing technical assistance to the attorneys representing Public Service Company of Colorado and has provided forensic services for clients throughout the United States since that time. He has taught both undergraduate and graduate power classes at the University of Colorado Denver campus including electric machines, power system protection and distribution system protection. He has participated in utility management audits for state commissions and has provided utility audit preparation for electric utilities. His areas of specialty in the audits have included planning, design, protection, operations, vegetation management and maintenance.

He has authored or co-authored approximately twenty papers, a number of which have been published in the IAS Magazine and IAS Transactions. His electrical specialty lies in the area of power system protection, system grounding, ground fault protection and electrical safety.

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Lecture Topics:

- High resistance grounding of low voltage systems
- System Grounding above 600 Volts: A Need for a Better Understanding
- Arc Flash Hazard Incident Energy Calculations – A Historical Perspective and Comparative Study of the Standards: IEEE 1584 and NFPA70E
- Protective Device Coordination and Arc Flash Analysis
- Practical Electrical Safety by Design
- A Better Understanding of Harmonic Distortion through phase shifting transformers
- Protective Relaying issues with Current Transformer Applications