

Mark D. Loose, Ph.D., P.E., CFEI
Senior Managing Engineer

Professional Profile

Dr. Mark D. Loose is a Senior Managing Engineer in Exponent's Electrical Engineering and Computer Science practice. Dr. Loose performs failure analysis related to the breakdown of insulation systems and materials in circuit boards, cables and appliances, as well as failure of semiconductor and other components used in electronic equipment. He also investigates failures of electrical/electronic systems that are alleged to have caused fires, electrocution, and electric shocks. Dr. Loose is also experienced in applying relevant electrical codes and standards including the NEC, NESC, OSHA, UL, ANSI, etc.

Prior to joining Exponent, his education centered on traditional electrical engineering topics, such as performance of electrical materials used in electric equipment and components and the analysis of electric systems. He has extensive experience in electric power engineering that includes advanced knowledge of power transformers, substation equipment, and transmission and distribution systems. Dr. Loose has aided in several new design evaluations and failure analysis of power transformers and substation equipment. His particular focus is on dielectric strength of materials used in power devices. He also has experience in programming and the modeling of power devices.

Academic Credentials and Professional Honors

Ph.D., Electric Power Engineering, Rensselaer Polytechnic Institute, 2003

M.Eng., Electric Power Engineering, Rensselaer Polytechnic Institute, 1997

B.S., Electrical Engineering, concentration in electric power, University of Delaware, 1996

Licenses and Certifications

Registered Professional Electrical Engineer, California, #E18585

Certified Fire and Explosion Investigator (CFEI) in accordance with the National Association of Fire Investigators, National Certification Board

Fire Investigation: Cause and Origin (1A), State of California, Office of the State Fire Marshal;
Hazardous Waste Operations and Emergency Response Training (Per Cal-OSHA GISO 5192 and 29 CFR 1910.120)

Publications

Loose MD. Lumped parameter based transformer analysis: Modeling, reduction, time and frequency domain solutions. Doctoral Dissertation, Rensselaer Polytechnic University, 2003.

Presentations

Kemal A, Mattison D, Murray S, Loose M. Degradation and ignition of polyvinyl chloride wire insulation. Proceeding, Fire and Materials 2007, San Francisco, CA, 2007.

Peer Reviewer

- IEEE Transactions on Magnetics, 2001–2005

Professional Affiliations

- Institute of Electrical and Electronics Engineers—IEEE
- IEEE Power and Energy Society—PES
- National Fire Protection Association—NFPA
- National Association of Fire Investigators—NAFI