



Curriculum Vitae of

MICHAEL A. REIN, B.S.C., P.E., C.F.E.I.

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SYNOPSIS

Mr. Rein's experience includes a variety of electrical engineering projects primarily for large industrial and utility organizations. His responsibilities have included design, analysis and review of electrical transmission, distribution, and control circuit equipment, installation of various electrical components, maintaining electrical safety in the workplace and preventive maintenance of electric equipment in a continuous process environment. Mr. Rein has used simulation software to aid in design and analysis for both real time and the future planning horizon of small and large scale electrical networks including but not limited to, load flow, voltage, short circuit, arc flash, production cost and protection analysis. Mr. Rein has also been involved in design, plan reviews, and supervising the installation of electrical transformers, switchgear, bus work, motors, protective relays and motor control centers. Maintenance activities include development and review of schedules, operational and safety related switching procedures and specifications for new power equipment and system installations. Furthermore, Mr. Rein is experienced with various FERC orders including those related to regional (Order 1000) and sub-regional (Order 890) transmission planning, as well as several NERC regulatory compliance standards, and has used this experience to aid in studies of the interconnection of large and small scale generation, transmission, and load facilities to a large scale transmission network. Mr. Rein has both assisted with and drafted expert testimony. Mr. Rein has also outlined a safety program based on NFPA 70E, the NEC and OSHA 1910 to ensure electrical safety is followed in the workplace. Mr. Rein has received training and participated in failure analyses related to fires, explosions and electrical appliances. In addition, Mr. Rein's experience with electrical equipment design and maintenance, and his knowledge of the use of electrical equipment in a hazardous environment together with his experience regarding workplace safety have given him a practical understanding of the complexity of electrical accidents enabling him to readily identify the cause and origin of electrical incidents. Mr. Rein also has experience in destructive and non-destructive testing and simulation of failure modes and scenarios. Finally, Mr. Rein's experience in residential construction has given him knowledge pertinent to construction defect related failures.

EDUCATION

Colorado School of Mines, Golden, CO.

B.S. Electrical Engineering

Power Emphasis, Bio-Engineering ASI

2006

Short Courses:

2005 NEC®, Electrical Safety in the Workplace, Hazardous (Classified) Locations

2007

Protection and Coordination, EATON Electrical

2007

2008 National Fire, Arson, & Explosion Investigation Training Program

2008

PSS®E Introduction to Power Flow and Steady State Analysis

2009

ABB PROMOD/GridView Introduction to Production Cost Modeling

2017

REGISTRATION

Registered Professional Engineer in Colorado
 Certified Fire and Explosion Investigator (NAFI)

EXPERIENCE

Palmer Engineering and Forensics, LLC, Kaysville, Utah Senior Electrical Engineer	2011 – Pres
Xcel Energy, Denver, Colorado Principal Engineer – Outage Coordination Transmission Operations Manager – Transmission Planning	2021 – Pres 2019 – 2021
Principal Engineer – Regional Transmission Planning	2017 – 2019
Senior Engineer – Regional Transmission Planning	2016 – 2017
Senior Engineer – Transmission Planning Senior Engineer	2012 – 2016
Transmission Planning Specialty Engineer	2011 – 2012
Electrical Engineer II	2008 – 2011
Electrical Engineer Intern	2005 – 2005
Knott Laboratory, LLC, Centennial, Colorado Electrical Engineer	2007 - 2008
University of Colorado Denver, Denver, Colorado Forensic Engineering Course Grader – Electrical Engineering Department	2008 – 2008
ConocoPhillips, Wilmington, California Electrical Engineer – Maintenance and Reliability	2006 – 2007

EXPERT TESTIMONY

Mr. Rein has assisted in the research and development of expert testimony provided by others in various jurisdictions across the country. Mr. Rein has reviewed the expert testimony provided in numerous cases involving personal injury, product defects, intellectual property, and class action lawsuits. Mr. Rein has also drafted legal testimony and has served as an expert witness in various aspects of utility scale transmission filings and proceedings including the planned project justification and operational reliability actions and expenditures.

PROFESSIONAL AFFILIATIONS

Mr. Rein is a member of the following technical and professional societies:

- IEEE - Institute of Electrical and Electronics Engineers
- NAFI - National Association of Fire Investigators
- NFPA - National Fire Protection Association
- WECC – Western Electricity Coordinating Council
- SPP – Southwest Power Pool