



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 and review of electrical transmission, distribution, circuit and control equipment, installation and fabrication 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 computer drafting software to aid in the design and studies of real time and future planning of small and large scale electrical networks including, protection and coordination, load flow, voltage, short circuit and arc flash analysis. Mr. Rein has also been involved in design and plan reviews and in supervising the installation of electrical transformers, switchgear, bus work, motors, protective relays and motor control centers. In addition, Mr. Rein has also been involved in the maintenance and reliability of electrical equipment located within a petroleum refinery. This includes development and review of planned maintenance schedules, operational and safety related power switching procedures and specifications for new power equipment and system installations. Furthermore, Mr. Rein is experienced with FERC orders 890 and 1000, and several NERC regulatory compliance standards, and has used this experience to aid in studies of the interconnection of large and small scale generation facilities, transmission facilities, and load facilities to a large scale transmission network. 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 testing, 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

2006

Power Emphasis, Bio-Engineering ASI

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

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 Transmission Planning Specialty Engineer Electrical Engineer II Electrical Engineer Intern	2011 – Pres 2008 – 2011 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
ConocoPhillips, Wilmington, California Electrical Engineer – Maintenance and Reliability	2006 – 2007

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
- CCPG – Colorado Coordinated Planning Group (Foothills Planning Group)