

Rowland C. Rudolf, III
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Education

Carnegie-Mellon University, Bachelor's Degree in Electrical Engineering, 1968.
Carnegie-Mellon University, Graduate Study Courses toward MSEE. PH.D.,
1968-1970. Board Certified Forensic Examiner, 1996
The American College of Forensic Examiners, Inc., Diplomate of the American
Board of Forensic Engineering and Technology, January 1999.

Experience

1989 to present - Bartel, Rudolf & Associates.
Electrical, accident and fire investigations.
Appliance Failure Analysis.
Engineering design critique.
Propane & Natural Gas System Analysis.
HVAC Systems, Failure and Analytical work.
Motor Vehicle Fire Analysis.

1973 to present - Rudolf Engineering
Directed or collaborated in over 1500 technical and/or forensic
investigations involving design analysis, electrical accidents, and fire
investigations.
Forensic Photography.

Design Analysis

These cases include such subjects as:

- Infrared and alarm systems analysis.
- HVAC systems analysis, including various refrigerant systems including chillers and other commercial heating and cooling equipment.
- Natural and LP gas appliance systems analysis.
- Natural gas distribution analysis.
- Affects of low gas pressure on gas equipment.
- Metallurgical analysis of contacts and various metals experiencing fire and arc heat.
- Electrical loss reduction techniques and analysis for transformer steels.
- Materials identification.
- Property analysis of materials at and below fire temperatures.
- Heat transfer and heat producing equipment analysis.

Electrical and Electro Mechanical Accidents

Involved in accident analysis and investigations of equipment failure including:

- Transformers as well as power stations and power substations.
- Electrical equipment damage.
- Underground cable failures.
- Hydraulic and related equipment.
- Communication equipment.
- Electrocution and failure analysis of:
 - Switch Gear
 - Buss Duct Work
 - Substations
 - Cable Failures
 - Fault Monitoring & Relay Gear
 - Circuit Breakers

Fire Investigations

- Investigated fires caused by careless use of electrical appliances.
- Investigated fires caused by electrical malfunctions in electrical apparatus.
- Refuted theories of failure alleged to have been electrical in nature.
- Analyzed fires alleged to be caused by chemical and/or mechanical means.

Preparation of exhibits for trial including:

- Demonstrations.
- Models.
- Prototypes.
- Graphs.
- 2 dimensional and 3 dimensional drawing artwork.
- Photograph layout boards.

The above activities were performed in part as a Sub-Contractor to Terry O. Hockenberry, Ph.D. PE. and Eugene W. Bartel, Ph.D. PE.

1978 to 1988 - Null, Rudolf & Associates

Computer consultants offering:

- total computer system design.
- both hardware and software.

1970 to 1973 - Project Engineer

Krux, Inc. Pittsburgh, Pennsylvania

- Design and refinement of industrial electro mechanical equipment.
- Supervised quality control as well as installation and service of this equipment.

1963 to 1970 - Project Engineer

Siltronics, Inc., Oakmont, Pennsylvania

- Engineer with responsibility in the following area:
 - Manager, quality control.
 - Manager, on-site inspection services.
 - Manager, customer service.
- Developed state of the art high current high pulse circuitry from bread board concept to production design.
- Developed infrared pulse technology for use in a intrusion alarm system.
- Refined other electrical and electronic equipment for military and other uses.

1964 to 1970 - Project & Development Engineer

Electrical Engineering Department, Carnegie-Mellon University;

- Conducted both pure and applied research experiments in the study of Arcs and Sparks and it's application in the field of Electrical Discharge Machining.

Also conducted experiments in:

- Low level electrical noise measurements.
- Thermal and electrical precipitation of dust particles.
- Semi-conductor crystal growth.
- Plasma generation and movement.

1962 to 1964 - Laboratory Technician

EE Dept., Carnegie-Mellon University

- Instrument repair.
- Assistance in research projects.

1961 to 1962 - Apprentice Electrician

Reno Electric Company, Ambridge, Pennsylvania.

- Industrial installations.
- Commercial installations.
- Residential installations.

Industrial Consulting

Engineering consultant on product design and industrial processes to:

ITT GRINELL
INGERSOLL MILLING MACHINE COMPANY
HOBART CORPORATION
RIVERSIDE PLASTICS CORPORATION
ENERGY ENGINEERING CORPORATION
ALLEGHENY LUDLUM STEEL

Patents

#4,767,469 - Electrical Discharge Scribing for improving core loss of grain-oriented silicon steel.

#4,780,155 - Capacitive Electrical Discharge Scribing for improving core loss of grain-oriented silicon steel.

Technical Societies

ANSI, American National Standards Institute (Past Member)

ASHRAE, American Society of Heating, Refrigeration, and Air Conditioning Engineers

ASM, American Society of Metals

ASGE, American Society of Gas Engineers

ABFC, American Board of Forensic Examiners

EDFAS, Electronic Device Failure Analysis Society

IAAI, International Association of Arson Investigators

IEEE, Institute of Electrical and Electronic Engineers

NFPA, National Fire Protection Association

Born

August 4, 1944

U.S. Citizen