Russell W. Patterson, P.E.

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Patterson Power Engineers, LLC
rwpatterson@ieee.org

EXPERIENCE

Owner/Consultant – Patterson Power Engineers, LLC March 2010 - Present

- Power system protection and analysis
- Transient analysis and studies
- Power system education

Vice President, Engineering May 2009 – March 2010
Tennessee Valley Infrastructure Group, Inc

- Wind farm protection
- Utility protection and analysis
- Adjunct electrical engineering lecturer at the University of Tennessee at Chattanooga

Consultant - Relayman Protection Services, LLC August 2008 – May 2009

- Power system protection (settings and analysis for all levels including distribution, transmission, and generation)

Manager, System Protection & Analysis February 2006 - August 2008
Tennessee Valley Authority February 2002 - October 2005

- Responsible for the setting of all protective relays in the TVA transmission system and at hydro, fossil, and nuclear generating plants
- Responsible for ensuring that TVA's protective relays maximize the reliability and security of the transmission system. This includes setting and ensuring the proper application and development of protection philosophy for the TVA
- Responsible for industry participation at the IEEE PSRC level and at protective relaying conferences and regulatory bodies.

Manager, Advanced Power Applications October 2005 - February 2006
Tennessee Valley Authority

- Responsible for maintaining and expanding the TVA state-estimator models required to support TVA's Reliability Authority function
- Conceived and initiated a project to integrate CAPE (Computer Aided Protection Engineering) analysis capabilities with the TVA Telegyr scada and Areva state-estimator systems to find real-time overload issues with protective relaying and potential problems (using state-estimator contingency analysis)

System Protection Project Specialist - Tennessee Valley Authority 2000-2002

- Responsible for recommending and approving protection schemes for all types of new construction projects and system upgrades including IPPs
- Responsible for support of field engineers for a fourth of the TVA system for problems/issues related to system protection and operation
- Responsible for the calculation of set points for protective relays and control devices in the transmission system (13kV up to 500kV) and for generators at fossil, hydro, and nuclear generation stations including low voltage plant systems.
- Responsible for providing support to system dispatchers and for providing protective relay settings for temporary configurations.

Manager, Power Quality - Tennessee Valley Authority 1999-2000

- Responsible for supporting field engineers with power quality and related issues and disturbances
- Responsible for the direction of TVA's Power Quality Program

Lead System Protection Engineer - Tennessee Valley Authority 1993-1999

- Responsible for support of field engineers with problems/issues related to system protection, analysis and operation
- Responsible for the calculation of set points for protective relays and control devices in the transmission system (13kv up to 500kv) and for generators at fossil and hydro generation stations including low voltage plant systems
- Specified, constructed and administrated a 12-workstation NT network supporting Computer Aided Protection Engineering (CAPE) program.
- Instructor in the TVA Advanced Protective Relaying Class
- Instructor in the TVA Engineer In Training Program

Field Engineer - Tennessee Valley Authority 1991-1993

- Performed standard tests on power system equipment (transformers, breakers, potential devices, current transformers, etc.)
- Performed routine and calibration tests on protective relays and meters
- Trouble shooting of protection and control circuits

PROFESSIONAL INVOLVEMENT

- Chairman of IEEE Power System Relaying and Control Committee (PSRC)
- Past chairman of the PSRC Line Protection Subcommittee
- Member of the PSRC Rotating Machinery Subcommittee
- U.S. representative on CIGRE Study Committee B5 working group B5.65, "Enhancing Protection System Performance by Optimizing the Response of Inverter-Based Sources"
- U.S. representative on CIGRE Study Committee B5 working group B5.47, "Network Protection Performance Audits"
- U.S. representative on CIGRE Study Committee C6 working group C6.30, "The Impact of Battery Energy Storage Systems on Distribution Networks"
- Past chairman of working group D4 (Application of Overreaching Distance Relays) of the PSRC Line Protection Subcommittee
- Past co-chairman of the SERC Protection and Controls Subcommittee (NERC regional body)
- TVA Engineer of the Year, 2002
- Member of the Electrical Engineering Advisory Board for the University of Tennessee at Chattanooga
- Member of Georgia Institute of Technology Protective Relaying Conference planning committee
- Instructor in Georgia Institute of Technology course, "Power System Relaying: Theory and Applications"

- IEEE Senior member
- Cigré member

LECTURING EXPERIENCE

Adjunct instructor in the Electrical Engineering department at the University of Tennessee (Knoxville and Chattanooga).

EDUCATION

University of Tennessee; Knoxville, TN — 2013-present
Ph.D., Electrical Engineering (in progress)
Cumulative GPA: 4.0/4.0 scale

University of Tennessee; Chattanooga, TN — 2008-2013
M.S., Electrical Engineering
Cumulative GPA: 3.88/4.0 scale
Major GPA: 3.88/4.0 scale

Mississippi State University; Starkville, MS — 1989-1991
B.S., Electrical Engineering
Cumulative GPA: 3.34/4.0 scale
Major GPA: 3.67/4.0 scale

Itawamba Community College; Fulton, MS — 1985-1989
A.A.A. Robotics and Automated Systems
GPA: 3.57/4.0 scale
Completed pre-engineering course work

PUBLICATIONS - See http://relayman.org/papers/papers.htm

LEGAL CASE EXPERIENCE - Available upon serious inquiry for expert witness retainer.