

Russell W. Patterson, P.E.

IEEE Senior member 01662659, CIGRÉ member 120060910

Experience

March 2010 - present Patterson Power Engineers, LLC

Owner/Consultant (Chattanooga, TN)

- Power system protection and analysis
- Transient analysis
- Power system education (short courses, mentoring etc.)

May 2009 – March 2010 Tennessee Valley Infrastructure Group, Inc.

Vice President - Engineering (Chattanooga, TN)

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

August 2008 – May 2009 Relayman Protection Services, LLC

Consultant (Chattanooga, TN)

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

Feb 2006 – Aug 2008 Tennessee Valley Authority

2002 – Oct 2005

Manager System Protection & Analysis (Chattanooga, TN)

- 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.

Oct 2005 - Feb 2006 Tennessee Valley Authority

Manager Advanced Power Applications (Chattanooga, TN)

- 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).

2000–2002

Tennessee Valley Authority

System Protection Project Specialist (Chattanooga, TN)

- 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.

1999–2000

Tennessee Valley Authority

Manager of Power Quality (Chattanooga, TN)

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

1993–1999

Tennessee Valley Authority

Lead System Protection Engineer (Chattanooga, TN)

- 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 T.V.A. Advanced Protective Relaying class.
- Instructor in the T.V.A. Engineer In Training program.

1991–1993

Tennessee Valley Authority

Field Engineer (West Point, MS)

- 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.

Education

1992-present Mississippi State University Starkville, MS

- M.S. Electrical Engineering (incomplete)

Major GPA: 3.57/4.0 scale

Completed all coursework at Mississippi State but hours expired before thesis completed. Have subsequently taken classes at University of Idaho and University of Tennessee at Chattanooga toward completing degree.

1989-1991 Mississippi State University Starkville, MS

- B.S. Electrical Engineering

Cumulative GPA: 3.34/4.0 scale

Major GPA: 3.67/4.0 scale

1985–1989 Itawamba Community College Fulton, MS

- A.A.S. Robotics and Automated Systems

GPA: 3.57/4.0 scale

- Completed pre-engineering coursework

Interests

My children, scuba diving, running, computers, learning, teaching.

Additional Information

- Member of the IEEE Power System Relay Committee (PSRC). Vice-chairman of the Line Protection subcommittee and member of Rotating Machinery subcommittee. The purpose of the PSRC is to write standards, guides and technical papers for the betterment of the power system industry.
- Chairman of working group D4 (“Application of Overreaching Distance Relays”) of the PSRC Line Protection subcommittee.
- Past co-chairman and member of the SERC Protection and Controls Subcommittee (NERC regional body).
- Prepared and presented “Brief Discussion of Bus Differential Protection” as part of IEEE Protection Tutorial – May 1998, Chattanooga, TN.
- Performed EMTP studies to determine breaker transient recovery voltage (TRV) duties from 13kV up to 500kV level. Recommended mitigation as necessary.
- Member of Georgia Institute of Technology Protective Relaying Conference planning committee.
- Proposed and successfully created the *sci.engr.electrical.sys-protection* Usenet discussion group dedicated to power system relaying and analysis. Later superseded it with the Yahoo group [Power System Protection](#).
- TVA Engineer of the Year, 2002.

Complete list of my papers: <http://relayman.org/papers/papers.htm>