

Russell W. Patterson, P.E.

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Experience

May 2009 - present Tennessee Valley Infrastructure Group, Inc.
Vice President - Engineering (Chattanooga, TN)

- Power system protection
- Fault analysis (and abnormal conditions)
- Protection and control design
- Transient analysis
- Power system protection education (short courses, lectures, papers etc.)
- 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
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).

2002 - Oct 2005 Tennessee Valley Authority
Manager System Protection & Analysis (Chattanooga, TN)

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
Major GPA: 3.57/4.0 scale
Coursework is complete. Thesis work remains to be completed.

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>