

## Improving Human Performance on the Grid

A conference and workshop on improving human performance and increasing reliability on the bulk power system

March 18 – 20, 2014

### Speaker Biographies (in order of presentation)

#### Dr. James Merlo



**James Merlo** is the Director of Event Analysis, Training and Human Performance in the Reliability Risk Management Group at NERC. Joining NERC in July 2011, James works

with the talented professionals in the electric reliability organization to promote the understanding and learning from events and occurrences that are experienced on the Bulk Electric System, assess the industry status and needs with regard to human performance challenges affecting bulk power system (BPS) reliability and provide world class training for the ERO staff and industry. In this role, he identifies opportunities and methods for improvement based on proven methods from other industries, and develops and promotes industry-wide sharing and collaboration to improve human performance components of BPS reliability.

James served in a variety of leadership roles in the US Army including combat tours in Desert Storm and Operation Iraqi Freedom. Significant positions include: Deputy Brigade Commander in Baghdad, Iraq 2004-2005 and as an assistant professor and program director at the United States Military Academy.

James has his B.S. in Human Factors Psychology from West Point, his M.S. in Engineering Psychology from the University of Illinois and his PhD in Applied Experimental and Human Factors Psychology from the University of Central Florida. He is the author of over 50 publications and book chapters on the subjects of human factors engineering and human performance.

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#### Michael Moon



**Michael (Mike) Moon** joined NERC in June 2009 and is currently the Senior Director of Reliability Risk Management. He came to NERC after a 26 year career as an Army engineer; in the later part of his career he specialized

in energy, environment and infrastructure. Significant positions include; Director of Electrical Sector Development in Baghdad, Iraq 2007-2008, managing the US reconstruction effort of the Iraqi grid; generation, transmission, distribution, sustainment and maintenance, and capacity development; and Infrastructure Engineer for the US European Command in Stuttgart, Germany, 2003-2005, managing new construction and sustainment, restoration and modernization of

existing facilities for the command's 500 plus installations across Europe.

Mike earned his master's in National Security Studies from the U.S. Army War College and a bachelor's degree in Applied Mathematics from Longwood University. He is married to his college sweetheart Laura, and they have two children; Matthew and Katie.

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## Gerry Cauley



**Gerry W. Cauley** was named President and Chief Executive Officer of North American Electric Reliability Corporation (NERC) in November 2009 and assumed the role in January 2010.

Mr. Cauley is responsible for overseeing NERC's mission to ensure the reliability of the North American BPS. As President and CEO, Mr. Cauley leads key programs affecting over 1,900 BPS owners, operators, and users, including standards and training, critical infrastructure, risk analysis, compliance monitoring, enforcement, situation awareness, reliability assessment, and government relations.

Mr. Cauley also oversees the operation of eight Regional Entities engaged in implementation of delegated responsibilities.

From 2007 to 2009, Mr. Cauley served as President and Chief Executive Officer of the SERC Reliability Corporation, a reliability Region covering 16 states in the southeastern and central United States. During this time he established new programs for monitoring and enforcing compliance with mandatory standards, developed training and educational programs,

and a program to track reliability recommendations.

Prior to his CEO career, Mr. Cauley served as Vice President and Director of Standards at NERC and was instrumental in preparing NERC's application to become the electric reliability organization (ERO). He spearheaded the development of an initial set of standards to ensure the reliability of the BPS in North America. Mr. Cauley was also a lead investigator of the August 2003 Northeast blackout and coordinated the NERC Y2k program, supervising the reporting and readiness of 3,100 electric organizations in the United States and Canada.

Additionally, Mr. Cauley has served in various positions of leadership during his career, including program manager of grid operations and planning at the Electric Power Research Institute, training consultant for electric system operations, nuclear and fossil plant operations, substations, and distribution. He also served as an officer in the U.S. Army Corps of Engineers.

Mr. Cauley has a bachelor's degree from the U.S. Military Academy at West Point, a master's degree from the University of Maryland in nuclear engineering, and a master's degree in business administration from Loyola College - Baltimore. Mr. Cauley is a registered Professional Engineer in the Commonwealth of Virginia.

## T. Shane Bush



**T. Shane Bush** is the co-founder of BushCo, Inc. whose primary mission is to "assist companies in eliminating unwanted outcomes related to human error" through the implementation of Human Performance Improvement (HPI). BushCo, Inc.

clients include organizations such as Bell Helicopter, Cessna Aircraft, Princeton University, Berkeley, British Energy, Chevron, Northwestern Energy, United Kingdom Human Performance Forum, Energy Solutions, BP Oil, Electricite' de France, International Paper, Schwan's Food, American Society of Safety Engineers, World Association of Nuclear Operators (WANO) and many others. Shane has provided Keynote addresses in Canada, England, Italy, Sweden, China, as well as numerous locations in the United States.

Shane has a BS in Corporate Training, an MS in Industrial Safety, is a Registered Radiation Protection Technologist, and Certified as a Human Performance Technologist with the International Society for Performance Improvement (ISPI). Shane works as an Adjunct Professor at the University of Idaho facilitating graduate level courses in Behavior Based Safety, Human Performance Fundamentals and Human Error Investigation. Shane has been involved in developing and overseeing a University of Idaho 15 credit Human Performance Graduate Certificate program as well. Shane spent more than 15 years in the field of Radiological Control at numerous commercial Nuclear Power Plants and the Department of Energy experiencing all aspects of human error.

### Monika Bay



**Monika Bay** leads BGE's Serious Injury and Fatality Prevention Team (SIFT), an employee-based team focused on solutions that reduce the risk of serious injuries and fatalities. Within

the portfolio of SIFT initiatives, Monika directly leads BGE's new risk management approach called Just Culture, designed to improve safety and operational performance by focusing on how

we design our systems and how we manage our behavioral choices.

Monika's 33 year career with BGE includes experience in nuclear and fossil generation, environmental land use management, military contracts and utility privatization, distribution pole asset management, and business transformation architecture. Monika earned her BES degree in Civil Engineering from the Johns Hopkins University in Baltimore, MD.

### Shari Heino



**Shari Heino** started her career in the Texas electric industry in 1999 as an attorney for the Electric Reliability Council of Texas, Inc. ("ERCOT"), where she helped develop and manage the ERCOT market rules,

handled market participant disputes and managed regulatory filings. In 2007, she joined Mathews & Freeland, a small utility law firm, and continued to practice utility law. In 2011, she became the Compliance Manager for Brazos Electric Power Cooperative, a Texas generation and transmission cooperative, where her responsibilities include overseeing Brazos' NERC compliance program in addition to supporting Brazos' compliance and risk management activities in other areas. Shari is a member of the Texas Reliability Entity's Member Representatives Committee ("MRC") and the Chair of the MRC's Training Subcommittee. Shari has been training dogs for most of her life and competes with her dogs in several dog sports including agility, flyball, and canine freestyle.

## Dr. Jake J. Mazulewicz



**Jake Mazulewicz** serves as Dominion Virginia Power's Human Performance Specialist. He focuses on designing and leading interactive Human Performance cases and classes.

He served as a Senior Instructional Designer, and created interactive training courseware for Distribution and Transmission Linemen, Substation Electricians, Designers and other technical specialists.

He is a former College Professor who taught Organizational Behavior, and Leadership at Bentley University near Boston. He earned his Ph.D. in Education from the University of Virginia. For four years he led Outdoor Experiential Learning courses for corporate clients. He is a former Firefighter, EMT, and Paratrooper.

## Rob Fisher



**Rob Fisher** is currently the owner and president of *Fisher IT, Inc.* a Native-American owned business that was recently awarded a Top-100 Native-American Owned Business in the US and a Top-50 Emerging Business in North Carolina by DiversityBusiness.com.

Rob has extensive experience in performing event investigations, designing performance improvement systems, designing and improving corrective action programs, designing and running procedure programs, and educating staff. He is a sought after trainer, and is routinely invited to speak at international, national and regional conferences on safety, procedures, performance improvement, human performance

and event investigation. Fisher IT has most recently been recognized internationally as instrumental in reducing fatalities and serious / life-altering injuries in high hazard industries using human performance and procedure concepts.

*Fisher IT, Inc.* provides training and consulting services in Human Performance Improvement, Root Cause, Corrective Action Program and Procedures / Programs / Processes for multiple industries. Current projects include US Nuclear, Non-Nuclear power generation and transmission, US Industrial and Petrochemical, Department of Energy and international clients.

## Cheryl MacKenzie



### **Cheryl MacKenzie,**

Investigator, Team Lead, U.S. Chemical Safety and Hazard Investigation Board – Ms. MacKenzie joined the CSB in September 2004. She has been involved in numerous CSB incident investigations and safety studies of

catastrophic chemical accidents, including the BP Texas City refinery explosion, the Xcel Energy hydroelectric tunnel fire, the Kleen Energy natural gas explosion, and the Texas Tech University laboratory explosion. She is currently the Team Lead for CSB's investigation of the 2010 Gulf of Mexico Deepwater Horizon oil rig disaster. Her areas of focus are on human and organizational factors, including human performance, safety performance indicators/metrics, and organizational culture. Prior to her CSB work, Ms. MacKenzie completed extensive study and research in the fields of anthropometrics, biomechanics, human information processing, and design. She has conducted numerous usability assessments for clients in office, industrial, and virtual-world work settings. Ms. MacKenzie is a graduate of Cornell University with

a Master's degree specializing in Human Factors and Ergonomics.

### Dr. Michael E. Legatt



**Michael E. Legatt** is the principal human factors engineer for the Electric Reliability Council of Texas (ERCOT), which manages the flow of electricity to 22.7 million Texas customers. Mr. Legatt has been a programmer for over 20 years, and worked in the energy, financial, medical, neuroscience research and educational sectors.

He has a Ph.D. in clinical health psychology/neuropsychology from the Ferkauf Graduate School of Psychology/Albert Einstein College of Medicine, and is currently pursuing a Ph.D. in energy systems engineering at the University of Texas at Austin.

As an amateur (ham) radio operator, he received a commendation for helping to provide emergency communications during the 2003 blackout in the northeastern United States, which sparked his interest in the psychology of energy management. He works to build systems designed to provide operators with needed information, optimizing for perception, speed, comprehension, and stress management. He also works at the organizational level to support the growth of the industry's high reliability culture.

At ERCOT, his development of the Macomber Map® has been featured in the New York Times, National Public Radio and T&D World. The Macomber Map was credited as being instrumental in helping ERCOT operators maintain grid reliability during several record-setting wind generation levels since 2010, and through several severe weather events since

2009. Macomber Map is now freely available as an open-source application.

He also works on the behavioral aspects of consumer electric use, researching electric vehicle to grid integration, behavioral aspects of conservation and consumer awareness in grid management, and the cybersecurity, behavioral, and reliability issues that arise with integration of new technologies across layers of the grid. He is ERCOT's lead on a collaborative project with the University of Texas at Austin, EV-TEC and the Pecan Street Project to study integrating electric vehicle charging and driver behavioral patterns with the bulk electric system. This research project looks at the viability of EVs to intelligently charge in a distributed fashion and provide ancillary services.

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### Alison Silverstein



**Alison Silverstein** is a consultant, lecturer and writer on electric transmission and reliability, energy efficiency, smart grid, renewable energy and technology adoption issues. She does extensive work on electric transmission issues for the U.S. Department of Energy, including work as lead author for the Department's National Electric Transmission Congestion Study. Silverstein serves as project manager for the North American SynchroPhasor Initiative, a collaboration between DOE, NERC, EPRI and the electric industry, and facilitated the multi-stakeholder Reliability Standards Working Group in Hawaii. She also advises a variety of private and governmental clients on technology, regulatory and other issues.

Silverstein is President of the Board of the American Council for an Energy Efficient Economy

and serves on the Board of Economic and Environmental Systems of the National Research Council and the board of the Health Alliance for Austin Musicians. She is a member emeritus of the GridWise Architecture Council.

Silverstein worked as Senior Energy Policy Advisor to Chairman Pat Wood, III, at the Federal Energy Regulatory Commission, from July 2001 through July 2004. She was a co-chair of the Electric Systems Investigation for the US-Canada Joint Power System Outage Task Force and principal author of the Interim and Final Blackout Reports. Before moving to the FERC, she worked as Advisor to Chairman Wood at the Public Utility Commission of Texas for six years, covering both electricity and telecommunications matters. Silverstein has also worked for Pacific Gas & Electric Co., ICF Inc., the Environmental Law Institute, and the U.S. Department of Interior.

Silverstein has a BA in Economics from the Johns Hopkins University, an MSE in Systems Analysis from Johns Hopkins, and an MBA from Stanford University. She lives with her family near Austin, Texas.

## Tony Muschara



**Tony Muschara** is Principal Consultant and Owner, Muschara Error Management Consulting, LLC, specializing in human error risk management in high-hazard, industrialized facilities. Recent clients include:

Amgen, PPL EU, Babcock and Wilcox (B&W), Biogen Idec, and The SI Group (chemical).

**Purpose:** Helping managers and leaders of high-hazard facilities protect people, products, and property from the human element by providing comprehensive and practical error management

applications developed from leading-edge research and experience, while honoring God and others through Wisdom, Integrity, and Love.

Over 36 years' experience in consulting, training, and management positions in commercial and military nuclear power operations

Authored numerous human performance guidelines and manuals for the nuclear power industry while employed by the *Institute of Nuclear Power Operations* (INPO) (22 years) in Atlanta, Georgia; several documents adopted by the U.S. Department of Energy and the International Atomic Energy Agency (IAEA)

A **Certified Performance Technologist** (CPT) awarded by the *International Society for Performance Improvement* (ISPI); considered a niche expert and specialist in the field of human error management

Qualified as a senior reactor operator (SRO) as a control room simulator instructor at *Farley Nuclear Plant*, while employed by *Westinghouse Electric Corporation*

Earned a Master in Business Administration (MBA) from *Kennesaw State University* near Atlanta, Georgia

Received a Bachelor of Science degree in mechanical engineering from the *U.S. Naval Academy*, served in the *U.S. Submarine Service* 25 years (active and reserve), Qualified in Submarines, and qualified as Engineer of Naval Nuclear Propulsion Systems; retired Captain, USNR-Retired

Married to his best friend, Pam, for 35 years, three children, and two grandchildren; lives near Atlanta, GA; enjoys hiking alpine trails in the Rocky Mountains

## David W. Bowman



**David Bowman** has 23 years of industrial experience with a strong background in Safety and Plant Operations.

David led the Human Performance effort at RiverBend Nuclear Station from 2004-2007 and has carried that experience over into the Distribution and Transmission business units of Entergy. David is a firm believer that companies can and will improve their overall performance if they enhance their behavioral culture.

## Donovan Guilbeau



**Donovan Guilbeau** has spent the last 29 years working in the Utility Management industry as both a contractor and investor owned Utility Manager along the Gulf Coast from Texas to Florida. His leadership

opportunities have included ownership of his own safety consulting business as well as Vice-President/Senior Partner positions with national companies. As Manager of Safety Delivery for a Fortune 500 Utility Company responsible for over 4,000 employees, Donovan specialized in Safety Leadership Development and Human Performance Principles with particular emphasis on effective field applications. Donovan is currently the Director of Human Performance for the Southern Electric Corporation, a professional Utility Power Line Construction/Maintenance Company located in Flowood, MS.

Donovan also is chairman of the Entergy Contractor Safety Advisory Board Human Performance Subcommittee.

## Red Smith



**Red Smith** is an Operations Analyst III at Southwest Power Pool. Joining SPP in August 2012, Red works as an analyst with the Operations Analysis and Performance Support (OAPS) team. He has

developed Human Performance training for SPP and is currently working on a close call data base and a Human Performance Program for Operations. Red was recently made a core team member of the North American Transmission Forum (NATF) Human Performance group.

Red served 28 years in the United States Air Force as an aircraft mechanic and flight engineer, he served in numerous leadership roles and has numerous tours of combat in both Afghanistan and Iraq.

Red has a B.S. in Professional Aeronautics from Embry Riddle Aeronautical University, a M.S. in Human Factors in Aviation and Aerospace safety also from Embry Riddle Aeronautical University. He has just completed work on an additional M.S. in Operations Management from the University of Arkansas.

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## Chris Lazzaro



**Christopher Lazzaro's** self-defined job purpose is to build and sustain organizations where software and hardware artisans love to work and come together to create remarkable products for customers; and through this

work, to inspire and lead other organizations and humans to positive change.

He works toward this purpose in his current role as the technical manager of several teams of programmers and technicians serving the core energy production and grid management needs of AECI. These teams provide remarkable technology services and systems for the power production, power marketing, system operations, transmission planning, and resource planning functions. Team responsibilities include supporting the Energy Management System and other critical systems that fall under CIP and reliability standards.

In previous lives, Christopher was five years a member of the adjunct faculty of the Breech School of Business at Drury University where he taught several courses and created his own programming-for-business curriculum. Chris was also a web site designer and later a systems programmer before moving onto management positions, although many believe that he still secretly uses Photoshop and Visual Studio when his office door is closed. He makes no comment on these allegations.

## Charlie Evans



**Charlie Evans** manages the team responsible for the Energy Management System which provides control of our generation and transmission assets. The team's scope includes RTU configuration, C programming, operator display creation, server management, software maintenance and the support of numerous communication systems. Charlie also served as the project manager for the recent implementation of the company's backup control center. His team's broad responsibilities

require a daily interaction with most of the CIP and reliability standards and highlighted the need for innovative training techniques.

## Earl Carnes



**W. Earl Carnes'** experience spans 40 years working with complex organizations performing hazardous, critical scientific and technical operations. He is a Sr. Advisor for the U.S. Department of Energy's Office of Health, Safety and Security and the Department's Liaison with the Institute of Nuclear Power Operations (INPO). He has served DOE in various oversight and policy positions for 23 years. Mr. Carnes prior affiliations included 17 years in commercial nuclear power with INPO, as a management consultant working with nuclear operating utilities. Prior to entering the nuclear industry he taught and conducted academic research.

Earl established the DOE Human Performance initiative; developed the DOE Human Performance Handbook; and contributed to numerous DOE & international directives and technical documents on safety management. He engages with government agencies such as the National Transportation Safety Board, the U.S. Chemical Safety Board, the Nuclear Regulatory Commission and the International Atomic Energy Agency; with private sector organizations such as the Joint Commission for health care accreditation, the North American Electric Reliability Corporation; the U.S. pipeline industry; and the academic community. Earl is an associate of the Center for Catastrophic Risk Management at the University of California Berkeley.

## Tom Harvey, CSP



**Tom Harvey, CSP**, is President and Owner of Allied Safety Associates, LLC, a safety, health, environmental, and performance -improvement consulting firm he founded in 2000. He is also a founding member of Optimize Performance, a firm dedicated to “reducing the frequency and lowering the severity of human error.”

A sampling of successful projects Tom has recently led includes:

- Human Performance process development, implementation, and training for various organizations - over 13,500 trained in past 18 months
- Safety Leadership and Systems Performance improvement process development and training for major utility, pharmaceutical, petrochemical, and manufacturing companies for over 1500 formal, and informal, leaders
- NFPA 70E program development, training and full implementation for nuclear fuels, construction, and manufacturing facilities.
- Injury and event Root Cause Analyses for scores of incidents, from complex fatalities to high-potential near-misses, which identified and improved upon systemic failures and human performance.
- Training more than 1650 employees at all plant levels on Safety Excellence, and facilitating implementation at four major chemical company facilities.
- Facilitating the preparation of tape manufacturers for industry-wide certification to HSE regulatory and best-practice standards.
- Developed and is featured in four best-selling safety videos on safety leadership, accident

investigation, safety feedback, and safety decision making that aligns with human nature.

Tom received a BS degree in Safety and Health from Louisiana State University, and began a 20 year career with Allied Chemical/AlliedSignal, a Fortune 50 company, in the petrochemical and manufacturing industries, where he was a trouble-shooting and problem-solving specialist.

He obtained his Certified Safety Professional designation by examination (CSP #9404) in 1990. In his spare time, Tom is a water enthusiast and snow ski instructor, splitting his time between Colorado and South Carolina enjoying his family and the great outdoors.

## Tim Autrey



**Tim Autrey** has been a student, thought leader, and practitioner of human performance for the past 30 years. He spent over 20 years in the US nuclear generation industry, substantially contributing to the evolution of human error reduction. His nuclear career culminated with a next-level approach to human performance that resulted in an 87.5% reduction in human error rate.

In 2005, Tim founded the Practicing Perfection Institute, Inc., to take next-level human performance to industries and organizations around the world. In addition to working with many of the largest organizations in the US, he has taken his message to Europe, China, and Russia, and has developed affiliate organizations in Canada, Belgium, and South Africa.

In 2010, Tim authored the Electrical Power Research Institute Report Human Error

Reduction: An Implementation Guideline (Report No. 1019687). He has published several Special Reports and video broadcasts, which have been seen on CBS, NBC, ABC, and FOX networks.

In 2014, he is spearheading efforts to launch the Human Performance Association, an international not-for-profit organization developed to provide education, tools, resources, and community for performance improvement professionals around the globe.

## Ron Fenex



**Ron Fenex** is the Energy Delivery Training Manager and has been with the Arizona Public Service Company for 32 years. Ron has worked in Fossil Generation, Nuclear Generation and the Transmission & Distribution areas during his career at APS.

Ron started his career in operations and since that time has worked extensively in the development areas of Corrective Action Programs, Human Performance Improvement (HPI), Nuclear Safety Culture and other associated training programs.

A strong believer and advocate for HPI, Ron currently serves as the WECC Human Performance Working Group Vice Chairman.

Ron continues to look for new and innovative ways to teach and anchor HPI within current and newly developed training programs for both operators and electrical field workers.

Ron is a graduate of Ottawa University and holds degrees in Communication and Human Resources/Business Administration.

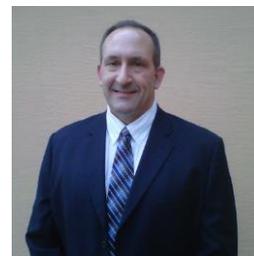
## John Patton



**John Patton** started his career at Pacific Gas & Electric in 1997 as Substation Construction Electrician. In 2000 he was asked to join the Field Safety Team where he served as the Safety Chairman for 8 years. He is currently a coach for the Grass Roots Safety Team, a member of the Trans Ops Safety Council and the PG&E Safety Culture Change Team. In 2010, he became a Sr. Contract Management Inspector, and continued as a trainer in that role through 2012.

John's present role at PG&E is a Transmission Operation Senior Human Performance Specialist. He is a certified Human Performance Practitioner, has completed NERC causal coding, and has completed the INPO course for Human Performance Leads. John is the Vice-Chair for WECC Human Performance Work group, a member of PG&E's Trans Ops Safety Council and Safety Culture Change Team. John received an AA degree from American River College in Sacramento, California.

## Allen D. Schriver



**Allen Schriver** joined NextEra Energy in 2008. Allen is currently the Power Generation Division General Manager of Compliance. With over 28 years of experience in the industry, he has held positions of operations superintendent and plant manager at various large hydroelectric plants where he was accountable for the operation and maintenance of both plant generation and bulk power transmission facilities. Allen is currently the acting Chair of the North American Generator Forum as

he and the Transition Team continue to develop the Forum into a non-profit corporation. He holds a Bachelor of Science in Electrical Engineering from The Pennsylvania State University and a Master of Science in Electrical and Computer Engineering from the University of Massachusetts. Allen is also a Registered Professional Engineer and a Six Sigma Green Belt.

### Kent Peterson



**Kent Peterson** is the Manager of the Human Performance Improvement program for the Transmission organization at Xcel Energy in Minneapolis, MN. Kent works with the Transmission Technical Compliance Training group and is responsible for leading the organization's efforts promote Human Performance Improvement – which leads to reducing errors, minimizing events, and increasing reliability.

Prior to his current position, he served in a variety of roles and positions at Xcel Energy, beginning in 1980 at the Monticello Nuclear plant, where he spent 22 years in the plant Operations department and the Operations Training organization. He has also led the Operations training program for fossil, hydro and alternative energy for Xcel. Kent currently serves on the core team of the North American Transmission Forum's Human Performance committee, and has been active in presenting Human Performance Improvement to other electric utilities, WECC and MISO groups.

Kent has earned a Bachelor's degree from Winona State University in Applied Physics, licensed as both Reactor Operator and Senior Reactor Operator by the U.S. Nuclear Regulatory Commission, and senior instructor-qualified for classroom and simulator by INPO. Kent has also

worked as curriculum developer and author of the text and course work for the Alternative Energy program in association with the National Center for Construction Education and Research (NCCER) through the Florida Energy Workforce Consortium, (in alliance with the University of Florida).

Kent resides in Andover, MN with his wife Melanie, their son, and two daughters.

### Brad Perrett



**Brad Perrett** is the Compliance and Training Manager at Minnesota Power, located in Duluth, Minnesota. Brad joined Minnesota Power in 1985, and is responsible for managing Minnesota Power's compliance efforts related to FERC, NERC, MRO, and RFC standards and requirements. Additionally, he oversees the training and support of System Operations, Power Delivery, and other areas requiring regulatory training.

Brad started his 29-year power industry career as a Hydro Plant Operator, and has held subsequent positions as an Assistant Engineer in Transmission Planning, a System Operator, a Senior System Operator, an Outage Coordinator, and the Supervisor of System Operations.

Brad served in the United States Navy for six years, where he operated and maintained electrical and electronic circuitry, hydraulics, pneumatics, mechanical systems, and other equipment. Brad holds a Bachelor of Science degree in Energy Management from Bismarck State College in North Dakota, and has been a NERC-Certified Reliability Operator since 1999.

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## Sam Chanoski



**Sam Chanoski** joined NERC in July 2012 as the Manager of Bulk Power System Awareness. Sam came from Duquesne Light where he worked as a Shift Supervisor, managing the real-time operation of Pittsburgh's transmission and distribution system. Prior to that, he worked as a line supervisor with FirstEnergy in Easton, PA, and with Consolidated Edison as a Substations Shift Supervisor and as an Auxiliary Systems Maintenance Supervisor in New York City. He served for six years on active duty in the U.S. Army as an infantry officer, and is currently an information operations officer in the Army Reserve. Sam has a Bachelor's degree in Computer Science and Operations Research from the U.S. Air Force Academy and an MBA from Lehigh University, and is currently pursuing a Masters of Engineering degree in Transmission and Distribution Engineering with Gonzaga University. His professional interests include real-time transmission and distribution operations, organizational behavior, control systems cybersecurity, and emergency management and resiliency.

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## Ben McMillan



**Ben McMillan** joined NERC staff on June 20, 2011 as a Risk Analysis Engineer. Prior to this, Ben spent time in the manufacturing industry, working in the fields of quality and process improvement, as the Division Quality Manager. A naval officer for 20+ years, he served in the surface warfare and nuclear power community, certified as a Naval Nuclear Engineer. Additionally he held positions

in the operational testing of weapons and command /control systems. He holds a Bachelor of Science in Mathematics from the United States Naval Academy and a Master of Engineering Management degree from Old Dominion University.

A Senior Member of the American Society for Quality (ASQ), Ben holds certifications from ASQ as a Quality Engineer (CQE), Reliability Engineer (CRE), Quality Auditor (CQA) and Manager of Quality/Organizational Excellence (CMQ/OE). He is also a Six Sigma Black Belt, and has been teaching Root Cause Analysis for 4 years, having developed the course for NERC as well as his previous employer.

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## Jule Tate



**Jule Tate** is the Manager Events Analysis in the Reliability Risk Management Group at NERC. Jule joined NERC in April 2008 and is currently responsible for managing NERC activities for analyzing BPS events to identify cause(s), risk to reliability and corrective actions. In this role, he shares this information with the industry to promote learning and prevent reoccurrence of events to assure continuous improvement of operational performance.

Prior to joining NERC, Jule was employed by Progress Energy for over 12 years where he held several positions in Power System Operations. As the Manager, Power System Operations Training Jule was responsible for the system operator's initial and continuing education training programs. Additionally he was responsible for training compliance with applicable NERC standards and other regulatory guidance and the testing, activation, and operation of Carolinas and

Florida’s backup energy control centers. As the Supervisor, Power System Operations Jule supervised control room operations of all generation and transmission resources in producing and delivering power to both retail and wholesale customers. Additional responsibilities included short-term planning, load forecasting, unit commitment, reserve planning, transmission system reliability, coordinating unplanned transmission outages. As a qualified Progress Energy System Operator Jule worked on shift in the control room operating generation resources, coordinating interchange schedules, issuing transmission switching instructions, coordinating unplanned transmission outages, and evaluating real time contingency analysis and mitigating the constraints.

Jule served in the US Coast Guard for five years and was accountable for electrical maintenance and repairs to various lighthouses, was a qualified Coxswain and Boarding Officer, and provided search and rescue operations on the coast of North Carolina.

Jule holds a bachelor’s in Electrical Engineering from North Carolina State University and has been a NERC Certified System Operator at the highest level since 1998.

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## Chris McManus



**Chris McManus** is a Reliability Engineer in the RRM Event Analysis group and has been with NERC since December 1, 2011. He has a B.S. in Electrical Engineering from Georgia Tech and is currently enrolled as a

graduate student, pursuing a M.S in Electrical and Computer Engineering with a focus in electric

power. Chris is also a registered EIT in the state of Georgia.

Prior to this, Chris worked for the Georgia Tech Research Institute where he developed and executed test procedures for projects with the Department of Defense. Chris also worked for EG Technology in the Quality Control group where he developed and executed test procedures to ensure quality output of EGT's cable headend video encoders and transcoders.

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## Ed Ruck



**Ed Ruck** is a Senior Reliability Engineer and is responsible for performing event analyses of power system events and reviewing the Event Analysis reports written by the industry.

Ed joined North American Electric Reliability Corporation (NERC) as a Regional Compliance Program Coordinator in October 2004 and was responsible for oversight of regional entities in their implementation of the mandatory compliance program, and since then has held roles in compliance auditing and compliance investigations prior to joining the Reliability Risk Management team.

Prior to joining NERC, he worked as a Senior Engineer at Mid-America Interconnected Network performing the Reliability Coordinator function. He also worked on EMS maintenance projects and regional planning studies.

Ed has a Bachelor of Science degree with a major in Electrical Engineering from the University of Illinois Champaign – Urbana.

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