

Improving Human Performance on the Grid

A conference and workshop on improving human performance and increasing reliability on the Bulk Power System

March 27 – March 29, 2012

Speaker Biographies (in order of Presentation)

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.

E-mail: ben.mcmillan@nerc.net

Dr. James Merlo



James Merlo is the Manager of Human Performance in the Reliability Risk Management Group at NERC. Joining NERC in July 2011, James leads the electric reliability organization's efforts to

assess the industry status and needs with regard to human performance challenges affecting bulk power system reliability. In this role, he identifies opportunities and methods for improvement based on proven methods from other industries, and develops and leads an industry-wide program to improve human performance components of bulk power system 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.

Email: james.merlo@nerc.net

Tony Muschara, CPT



**Principal Consultant and Owner
Muschara Error Management
Consulting, LLC**

- **Principal Consultant and Owner**, Muschara Error Management Consulting, LLC, specializing in human error risk management in high-hazard, industrialized facilities. Recent clients include: General Electric, First Energy, Bruce Power, PPL EU, and U.S. Department of Energy

- Over **35 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 as an employee (22 years) of the *Institute of Nuclear Power Operations* (INPO) in Atlanta, Georgia. Several documents adopted by the U.S. Department of Energy

- 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 Masters in Business Administration (**MBA**) from *Kennesaw State University* near Atlanta, Georgia

- Received a bachelor's 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 Plants; retired as a Captain, USNR-R

- Married to his best friend, Pam, for 35 years, three children, and two grandchildren; lives near Atlanta, GA; loves to hike and backpack alpine trails in the Rocky Mountains.

Dr. Patrick J. Sweeney



Patrick J. Sweeney is the Executive Director of Georgia Gwinnett College's Shackelford Leadership Institute. He recently retired from the United States Army as a Colonel with over 29 and half years of leadership experience. The past six

years, he served as the Deputy Head, Acting Head, and Director of the Eisenhower Leader Development Program in the Department of Behavioral Sciences and Leadership at the United States Military Academy in West Point, New York. In these roles, he: led and developed 41 faculty members; oversaw the behavioral sciences and leadership education for 4400 cadets; and managed the graduate program, a joint venture with Teachers College, Columbia University, that educated and prepared 25 Captains and Majors (middle level managers) per year to serve as the cadets' primary leader developers. Furthermore, Pat played an instrumental role in refining and improving West Point's leader development system. He served in tactical assignments worldwide, commanded 3rd Battalion, 320 Field Artillery, 101st Airborne Division (550 person organization), and served with the 101st during Operation Iraqi Freedom I. Pat holds a Ph.D. and Master of Arts in Social Psychology from the University of North Carolina at Chapel Hill and a Master in Military Arts and Science from the U.S. Army Command General Staff College. He has published across an array of academic and military venues to include: *American Psychologist*, *Journal of Applied Social Psychology*, *Journal of Positive Psychology*, *Journal of Student Development*,

Applied Psychology: An International Review, and various professional military journals. His research interests center on leader, leadership, and organization development for dangerous contexts. Current research projects include longitudinal studies exploring: trust and cohesion development in organizations; enhancing group members' resilience to the adversities of dangerous contexts, and leader development throughout a career. Pat recently led a team of 54 scholars and practitioners to produce a book entitled, *Leadership in Dangerous Situations: A Handbook for the Armed Forces, Emergency Services, and First Responders.*

Tim Autrey



Tim Autrey has spent the majority of his professional life working to save lives, keep people from getting hurt, prevent physical and environmental catastrophe, and to improve efficiency and profitability. How?

Through the enhancement of human performance.

Tim has been a student of human psychology since his earliest days. He spent over a year of his life underwater aboard the USS Ohio (the first Trident submarine) studying human behavior.

During a twenty-year career in the US commercial nuclear power industry, Tim Autrey orchestrated/achieved major enhancements in human performance, including:

- He functioned as a key member of the management team responsible for the fastest ever nuclear plant turnaround
- He designed and deployed a human performance enhancement approach that resulted in an 87.5% reduction in human error within a 30-month period
- He developed a simple error reduction tools handbook that has subsequently been adopted by nuclear plants worldwide (as well as by

some of the world's largest organizations such as TVA, National Grid, and NRG)

In 2005, Tim Autrey founded the Practicing Perfection Institute, Inc. (PPI). Its purpose? To take the strategies and tools that have proven extremely successful within the US commercial nuclear power industry and couple them with next-level deployment and worker involvement methods in pursuit of a vision: *Event-free, world-wide- one life at a time.*

Since the founding of the Institute, organizations of all types have seen tremendous success at reducing human error and increasing efficiencies through the culture change brought on by the strategies and tools employed. Some of these organizations include:

- Bechtel
- Northeast Utilities
- FPL ENERGY
- Dominion
- TVA
- Lower Colorado River Authority
- PPL
- NRG
- National Grid
- Ontario Power Generation

Tim Autrey continues to lead worldwide. As CEO of the Practicing Perfection Institute, Inc., he has led human performance enhancement efforts in Russia and China, and PPI currently has affiliate organizations in Canada, Belgium, the Netherlands, and South Africa.

Tim has earned a global reputation as a thought leader in human error reduction and human performance enhancement. His recent works / publications include:

- The HU Factor™- A Fresh Approach to the Challenge of Human Error
- Mistake-Proofing Six Sigma: How to Minimize Project Scope and Reduce Human Error
- Beyond Behavior-Based Safety: Taking Safety Performance to the Next Level
- Viral Accountability™: When 'Good Enough' is Not an Option

- EPRI Report- Human Error Reduction: An Implementation Guide (Report No. 1019687)

Gerry Cauley



Gerry W. Cauley was named President and Chief Executive Officer of the 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 bulk power system. As President and CEO, Mr. Cauley leads key programs affecting over 1900 bulk power system 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 ERO. He spearheaded the development of an initial set of standards to ensure the reliability of the bulk power system 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.

Earl Shockley



Earl Shockley is the Director of the Reliability Risk Management Group at NERC. Earl is responsible for directing all NERC activities with respect to Bulk Power System Awareness and crisis response, Event Analysis, Human Performance and

Compliance Investigations across North America. Earl joined NERC in August of 2007 and has served in roles of increasing responsibility including: Director of Event Analysis and Investigations, Manager of Compliance Violation Investigations, Lead Compliance Investigator and Regional Compliance Coordinator.

Earl began his career in the United States Navy and has served 34 years in the power industry. Before he came to NERC, Earl was employed by the Tennessee Valley Authority, Seattle City Light and San Diego Gas & Electric. During this period he served in various roles of increasing responsibility including: Project Manager of Compliance and Standards, Technical Instructor, Operations Shift

Supervisor, Senior Power Dispatcher, Balancing Authority, Transmission System Operator and Senior Outage Coordinator.

Earl led or participated on many accident/event investigations during his career, including the NERC lead investigator on the 2008 Florida Blackout, executive sponsor on the Feb 2011 Southwest Cold Snap Event. Earl is a former lead instructor for cause analysis methods/event investigations, electrical safety and human performance fundamentals.

Earl holds a Bachelor of Science degree in Business Administration & Organizational Management and is currently working on his Masters degree in Engineering Management. Earl also has completed numerous advanced technical power system apprenticeships and certification courses while in the US Navy and the electric industry. He holds certifications in the following areas:

- Certified Level 3 Investigator - Accident Investigation & Root Cause Analysis
- Certified Technical Instructor / Facilitator
- NERC Certified System Operator – Reliability (1998 – 2012)
- Previously held - WSCC Certified System Operator (1998 – 2000)

Dr. Peter Hancock



Peter A. Hancock, D.Sc., Ph.D. is the 16th ever University Pegasus Professor and Provost Distinguished Research Professor in the Department of Psychology and the Institute for Simulation and Training, as well as at the

Department of Civil and Environmental Engineering and the Department of Industrial Engineering and Management Systems at the University of Central Florida (UCF). At UCF he is the Director of the MIT² Research Laboratories and Associate Director of

the Center for Applied Human Factors in Aviation (CAHFA). Prior to his current position he founded and was the Director of the Human Factors Research Laboratory (HFRL) at the University of Minnesota where he held appointments as Professor in the Departments of Computer Science and Electrical Engineering, Mechanical Engineering, Psychology, and Kinesiology as well as at the Cognitive Science Center and the Center on Aging Research. He continues to hold an appointment as a Clinical Adjunct Professor in the Department of Psychology at Minnesota. He is also an affiliated Scientist of the Humans and Automation Laboratory at MIT, a Research Associate of the University of Michigan Transport Research Institute, and a Senior Research Associate at the Institute for Human and Machine Cognition in Pensacola, Florida. Professor Hancock is the author of over seven hundred refereed scientific articles and publications as well as writing and editing fifteen books including: *Human Performance and Ergonomics* in the Handbook of Perception and Cognition series, published by Academic Press in 1999. *Stress, Workload, and Fatigue*, published in 2001 by Lawrence Erlbaum and *Performance under Stress* published in 2008 by Ashgate. He is the author of the 1997 book, *Essays on the Future of Human-Machine Systems* and the 2009 text, *Mind, Machine and Morality* also from Ashgate Publishers.

Dr. Hancock has been continuously funded by extramural sources for every one of the twenty-eight years of his professional career, including support from NASA, NSF, NIH, NIA, FAA, FHWA, DARPA, the US Navy, Army and Air Force as well as numerous State and Industrial agencies. He was the Principal Investigator on a Multi-Disciplinary University Research Initiative (MURI), in which he oversaw \$5 Million of funded research on stress, workload, and performance, which was the first MURI in behavioral science ever awarded by the US Army. To date, he has secured over \$16 Million in externally funded research during his career. In 1999 he was the *Arnold Small Lecturer* of the

Human Factors and Ergonomics Society and in 2000 he was awarded the *Sir Frederic Bartlett Medal* by the Ergonomics Society of Great Britain for lifetime scientific achievement. He was the Keynote Speaker for the combined meeting of the International Ergonomics Association and the Human Factors and Ergonomics Society in 2000 in San Diego. It was the largest ever professional meeting of the discipline. In 2001, he won the *Franklin V. Taylor Award* of the American Psychological Association as well as the *Liberty Mutual Prize for Occupational Safety and Ergonomics* from the International Ergonomics Association. In association with his colleagues, Raja Parasuraman and Anthony Masaloni, he was the winner of the *Jerome Hirsch Ely Award* of the Human Factors and Ergonomics Society for 2001, the same year in which he was elected a *Fellow* of the International Ergonomics Association and was awarded a Doctor of Science (D.Sc.) degree from Loughborough University in England. In 2002, he was awarded the *Jastrzebowski Medal* of the Polish Ergonomics Society for contributions to world ergonomics and in the same year was named a Fellow of the Ergonomics Society of Great Britain.

Dr. Hancock is a multiple-term Member of the National Academy of Sciences (NAS), National Research Council's Committee on Human Factors and in that capacity has served as Chair and Organizer for a number of sub-committees. In 2003 he won the *Liberty Mutual Medal* of the International Ergonomics Association, a world-wide competition for innovative advances in occupational safety and ergonomics. In 2006, he won the *Norbert Wiener Award* of the Systems, Man and Cybernetics Society of the Institute of Electrical and Electronic Engineers (IEEE), being the highest award that Society gives for scientific attainment. It is of interest also to note that the company 'Geek Squad' which is presently a subsidiary of 'Best Buy' and which was featured on '60 Minutes' in January 2007, was founded by Robert Stephens while working in Dr. Hancock's Laboratory at Minnesota. In 2007, Dr. Hancock was

the recipient of the *John C. Flanagan Award* for the Society of Military Psychologists of the American Psychological Association for lifetime achievement and he was also the 2007 recipient of the *A.R. Lauer Award* of the Human Factors and Ergonomics Society for lifetime contributions to safety. In 2008, he received the *Otto Edholm Award* of the Ergonomics Society as well as the *Raymond F. Longacre Award* of the Aerospace Medical Association for outstanding accomplishment in the psychological and psychiatric aspects of aerospace medicine. Also in 2008, he was the winner of the *Andrew P. Sage Award* of the Systems, Man and Cybernetics Society of the Institute of Electrical and Electronic Engineers (IEEE) for the best published work in the Journals of the Society which numbered over three-hundred papers for the year. In 2009, he was named *Pegasus Professor* of the University of Central Florida. This is the highest award of the University that is now the largest single university in the United States. Professor Hancock is only the 16th individual ever to be so-named in the history of the Institution. In 2011, he was named the *Taylor Award* winner of the Aerospace Human Factors Association and gave the opening Plenary Keynote Address at the Graz International Conference on Aviation Psychology. He also won the *Admiral Leland Kollmorgen Spirit of Innovation Award* of the Augmented Cognition Society. A 2011 member of the *Cosmos Club*, his current experimental work concerns the evaluation of behavioral response to high-stress conditions, while his theoretical work concerns cultural influences on perception and action and also human relations with technology and the possible futures of this latter symbiosis. He is a *Fellow* and past President of the Human Factors and Ergonomics Society and *Fellow* and past President of the Society of Engineering Psychologists as well as a former Chair of the Board of the Society for Human Performance in Extreme Environments.

Dr. Hancock plays golf and collects and studies antique maps. He is a Ricardian researcher, an area in which he has published extensively, the latest

work being the text, *Richard III and the Murder in the Tower* which was published in hardback by the History Press in 2009 and has now entered its second paperback printing.

Pete Knoetgen



Pete Knoetgen is Director of Training for NERC in Atlanta, Georgia. In this position, Mr. Knoetgen is responsible for managing the industry's operator certification, continuing education and training programs. He joined NERC in June 2011.

Prior to joining NERC, Mr. Knoetgen was with the Institute of Nuclear Power Operations for nearly 20 years. As Director of Accreditation, he led the nuclear industry's training program Accreditation Team Visit process, conducting about 30 accreditation team visits per year, conducted workshops and training, provided assistance, developed industry training guidelines, and served as secretary of the National Nuclear Accrediting Board.

Previous positions at INPO included accreditation team manager; manager, Future of Learning Initiative; and National Academy for Nuclear Training e-Learning (NANTeL) manager. He began his INPO career in 1991, working in various capacities, including engineering, plant analysis and performance improvement, leadership course manager, assistant to the CEO, and Board Secretary.

Mr. Knoetgen completed the certification program in Training and Human Resources Development at the University of Georgia. He also earned a bachelor of science in mechanical engineering from the U.S. Naval Academy and a Master of Science degree in nuclear engineering from Georgia Tech.

Prior to INPO, he held engineering and management positions at Nuclear Assurance

Corporation and Baltimore Gas & Electric. In 2004, he retired from the U.S. Navy Reserve as a captain, following mobilization for operations Iraqi Freedom and Enduring Freedom.

Robert D. Schwermann



Robert D. Schwermann is currently a Senior Operations Specialist, Human Performance at PG&E. Bob has worked in the energy industry for over 38 years and has a broad pioneering base of knowledge and experience in both operations and merchant functions including Power System Scheduling, Trading, Transmission and Distribution Operations, and Hydro and Substation Operations. He is presently Chair of the WECC Human Performance work group at WECC and Vice-Chair of the North American Transmission Forum Human Performance WG.

Bob is a past member of the NERC Standards Committee and the Interchange Subcommittee. His merchant involvement was as a member of the NAESB Board of Directors and Executive Committee and he also chaired the NAESB Seams Subcommittee and the Interpretations Subcommittee. Bob served as Chair of the Western Electricity Coordinating Council's (WECC) Market Interface Committee and is a past chair of the Market Issues Subcommittee and the Interchange Scheduling and Accounting Subcommittee. Bob earned his Bachelor of Arts degree from California State University-Chico and is a Vietnam Veteran.

LD Holland



Mr. L.D. Holland has over thirty-two years of experience within the electrical utility industry, including the nuclear electrical generation side of the industry.

L.D. is a qualified:

- Human Performance Management Consultant
- Total Quality Management Certified Consultant
- PII Certified Human Error Reduction Instructor
- INPO Certified Human Performance Fundamentals Facilitator
- Duke Energy Nuclear Accredited Instructor

In 1995 L.D. began developing leadership case studies based on real life situations to highlight and define essential human performance and leadership behaviors. He believes that Human Performance can focus management and worker on the importance of the interdependence between *prevention, detection, and the correction of human errors within the workplace*. These case studies have been used throughout the country to promote and develop these behaviors for the purpose of improving utility performance. L.D. has provided these presentations throughout the electrical industry including *Alabama Power, Bonneville Power Administration, CAISO, Con Edison of New York, EPRI, Imperial Irrigation, MidWest ISO, Mississippi Power, Portland General Electric, and WMECO*.

Mr. Holland has also done extensive research and provided lectures on human performance issues of how leaders (*management and workers*) can adequately address demographic challenges within the workplace; diverse work groups of today, such as, traditionalists, baby-boomers, generations X'ers and millenials.

During his years with the utilities, he has served as:

- I&C Technician (Westinghouse Certified)
- I&C Supervisor
- Qualified ISS Plant Systems Instructor
- Qualified Classroom and Simulator Instructor - Operations and I&C

- INPO E&A and Training Accreditation Auditor
- Nuclear Site Human Performance Manager

In addition to these qualifications and experiences L.D. is also a pilot instructor, pilot, motorcycle safety instructor and enthusiast, FATHER, and HUSBAND.

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.

Earl Carnes



W. Earl Carnes is the Sr. Advisor for High Reliability for the U.S. Department of Energy's Office of Health, Safety and Security. He has served with DOE in various oversight and policy positions for 21 years. His principle role is to advise DOE and DOE contractor officials on improving organizational safety and performance across the total mission portfolio of nuclear defense, scientific research, and environmental management. Earl established the

DOE Human Performance initiative and was the lead author for the DOE Human Performance Handbook.

To promote education and information sharing in high reliability seeking operations, Earl maintains liaison with other 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 the private sector through organizations such as the Institute of Nuclear Power Operations, the Joint Commission, and NERC; and the academic community. Earl is also an associate of the Center for Catastrophic Risk Management at the University of California Berkeley.

Mr. Carnes prior affiliations included 18 years in commercial nuclear power with the Institute of Nuclear Power Operations, as a management consultant and with Alabama Power Company. Prior to entering the nuclear industry he was in the academic community teaching and conducting research.

Mr. Carnes has a Masters degree in Communication, a BS degree in Chemistry, completed advanced graduate work in engineering management with a focus on knowledge management; has specialized training in nuclear, chemical and biological emergency management; and holds a certificate in Human Performance Improvement from ASTD.

Christopher A. Hart



Christopher A. Hart is the Vice Chairman of the National Transportation Safety Board, having been nominated by President Obama and confirmed by the Senate in 2009. The NTSB investigates major transportation accidents in all modes of transportation, determines probable cause, and makes

recommendations in an effort to prevent recurrences. He was previously a Member of the NTSB in 1990, having been nominated by (the first) President Bush.

Mr. Hart's previous positions have included:

- Deputy Director, Air Traffic Safety Oversight Service,
- Federal Aviation Administration,
- Assistant Administrator for System Safety, Federal Aviation Administration,
- Deputy Administrator for the National Highway Traffic Safety Administration (NHTSA),
- Deputy Assistant General Counsel to the Department of Transportation,
- Managing partner of Hart & Chavers, a Washington, D.C., law firm, and
- Attorney with the Air Transport Association.

Mr. Hart has a law degree from Harvard Law School and a Master's Degree (magna cum laude) in Aerospace Engineering from Princeton University. He is a member of the District of Columbia Bar and the Lawyer-Pilots Bar Association, and he is a pilot with commercial, multi-engine, and instrument ratings.

Chuck Mowll



Chuck Mowll is the executive vice president for Business Development, Government and External Relations at The Joint Commission. In this role, he oversees the matrixed, inter-department Strategic Business Units for the Ambulatory Care, Behavioral Health Care, Home Care, Health Care Services, and Long Term Care programs. Mr. Mowll also directs the communications and marketing functions, as well

as federal and state government relations efforts including the activities of The Joint Commission's Washington office.

Mr. Mowll was responsible for creating The Joint Commission's Disease Specific Care Certification option that recognizes the exemplary efforts of health care organizations in the care of patients with chronic conditions. He is an advocate in pursuit of The Joint Commission's public policy priority on narrowing the nation's organ donation gap. Mr. Mowll speaks frequently on The Joint Commission's Transplant Safety standards and serves on the board of the Alliance for Organ Donation and Transplantation.

Prior to joining The Joint Commission, Mr. Mowll served as Vice President for Financial Management at the New Jersey Hospital Association (NJHA). At NJHA, he was responsible for policy development and advocated for hospital financial interests under the state's all-payer rate setting system. Previously, he was director of the national office of Policy and Government Relations for the 27,000-member Healthcare Financial Management Association in Westchester, Illinois.

Mr. Mowll received a master's in public health from the Robert Wood Johnson Medical School, Rutgers University, New Brunswick, New Jersey. Mr. Mowll is a Fellow in the Healthcare Financial Management Association and the American College of Healthcare Executives.

Chuck Lewis



Charles "Chuck" Lewis, Director
Office of Corporate Safety Programs
Office of Health, Safety and Security
US Department of Energy

Chuck has been with the Department of Energy in various oversight program roles over the past 22 years. These responsibilities

at the Headquarters level have included the safety management system evaluations, Director of Emergency Management Oversight, and Director of Corporate Safety Analysis and Programs. Among his current responsibilities is the accident investigation and prevention program. Over the past four years, Chuck has helped influence the incorporation of human performance improvement considerations into the event and accident investigation causal analysis process.

In the 1980's, Chuck worked with the State of Maryland Department of the Environment. He managed hazardous waste and superfund regulatory programs, including both civil and criminal investigations, and enforcement actions.

He began his professional engineering career in the 1970's in the design and operations of wastewater treatment facilities. Chuck holds a B.S. in Civil Engineering from the Rochester Institute of Technology (RIT).

Ben Marguglio



BW (Ben) Marguglio

- Management and technical consultant with fifty-six years of experience working with high technology enterprises, formerly as a corporate executive - including executive level director and division director positions.
- Presenter of the acclaimed *Human Error Prevention* Seminar and author of the acclaimed *Human Error Prevention Bookinar*TM.
- Fellow of the American Society for Quality (ASQ) since 1974.
- ASQ Certified Reliability Engineer, Quality Engineer, Quality Auditor, and Manager of Quality / Organizational Excellence.

- Author of more than 100 technical and management papers and presentations and three books:
 - *Quality (Management) Systems in the Nuclear Industry*; American Society for Testing and Materials; 680 pages; 1977;
 - *Environmental Management Systems*; Marcel Dekker, Inc; 208 pages; 1991;
 - *Human Error Prevention*; Bookinars, Inc.; 416 pages; 2009.
- Immediate Past Chair, Energy & Environmental Division, ASQ

Tom Harvey, CSP



Tom Harvey, CSP, is President and Owner of Allied Safety Associates, LLC, a safety, health, and environmental consulting firm he founded in 2000. A sampling of successful projects Tom has recently led includes:

- Safety Leadership and Human/Systems Performance development and training for major utility, pharmaceutical, petrochemical, and manufacturing companies for over 1500 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, that identifies and improves upon systemic failures and human performance.
- Train more than 1650 employees at all plant levels on Safety Excellence, and facilitated implementation at four major chemical company facilities.

- Facilitate 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 troubleshooting and problem-solving specialist.

He obtained his Certified Safety Professional designation by examination (CSP #9404) in 1990.

In his spare time, Tom is a ski instructor, splitting his time between Colorado and South Carolina enjoying his family and the great outdoors.

William (Billy) O. Ball



William O. (Billy) Ball

Executive Vice President and Chief Transmission Officer
Southern Company
Birmingham, Alabama

Billy is responsible for the planning, design, construction, operation, and maintenance of Southern Company's transmission system. Billy is actively involved in electric utility industry policy matters. He currently serves on the Eastern Interconnection Planning Collaborative Executive Committee, National Institute of Standards and Technology (NIST) Smart Grid Federal Advisory Committee (SGFAC) and is Chairman of the Board of the North American Transmission Forum.

Prior to his current position, Billy was Senior Vice President, Transmission Design and Construction. From 2004 to 2008, he was Senior Vice President, Transmission Planning and Operations, and was

responsible for the planning and operations of the Southern Company's network transmission grid, transmission policy and industry interfaces. While in this role, he served as Vice Chairman of the Board of the Southeastern Electric Reliability Council, and Chairman of the North American Electric Reliability Council Members Representative Committee.

Billy's previous experience includes positions at Mirant (formerly Southern Energy) where he was responsible for technical due diligence on business development projects, transmission and O&M support to the various business units, and establishing and implementing safety and health policy at Mirant. He also held the position of Manager, System Planning, with both generation and transmission planning responsibilities at Mississippi Power, and played a key role in the development and certification of the company's 1,100 MW combined cycle facility at Plant Daniel. He served as Mississippi Power's technical witness in numerous regulatory hearings.

Billy is a native of Columbia, Mississippi. He is a Summa Cum Laude graduate of Mississippi State University with a bachelor degree in Electrical Engineering (May 1987). He also holds a MBA from the University of Southern Mississippi (May 1994). Billy serves on the Board of Briarwood Christian School and Mississippi State University Dean's Advisory Council. Billy is a registered professional engineer in Mississippi.

Billy and his wife, Cindy, have four boys: William, Jordan, Andrew, and Brandon. The family resides in Birmingham.

Michael Carden



Michael Carden

Dominion Virginia Power
Technical Consultant
System Protection-Methods
and Best Practices

Mike has been with Dominion Virginia Power's System Protection organization for 26 years. The first 22 years were spent building and commissioning the control systems for Dominion's transmission system and power plants.

The last 4 years have been spent developing and implementing best practices for 120 field technicians around the Dominion system. These best practices include the Human Performance Tools designed to reduce and eliminate any human error that might affect the electric transmission system. He has a B.S. in Business Management and an A.S. in Industrial Instrumentation.

Jim Morrison, CPT



Jim Morrison is a graduate of New Mexico State University and recently retired from 31 years service in the US Coast Guard. During his USCG career, he served in operations afloat, command afloat, operational

test director, and intelligence liaison positions. Recognized as a Certified Performance Technologist by the International Society for Performance Improvement, he was instrumental in USCG projects to provide operational support to Caribbean nations, reorganize the service's aids to navigation fleet, and acquire a new heavy icebreaker for the Great Lakes. While assigned to USCG Headquarters, Jim served on the HQ Command Center's Incident Management Team during hurricanes Katrina and Rita, coordinating the nation-wide USCG operational response.

Working as a performance improvement consultant since retirement, he has been involved in several projects including an award winning global organizational effectiveness study for the Defense Security Cooperation Agency. He has just completed a 15-month assignment as an HPI subject matter expert for Luminant, the largest electrical power generator in Texas.

Kevin Harris



Kevin Harris has 25 years of service with Northeast Utilities in the field of Test and Commissioning. Currently, Kevin serves as a Field Supervisor for Northeast Utilities Transmission Construction, Test and Maintenance Team. He started his career with Northeast Utilities Nuclear Production Test Group. After 11 years as a Nuclear Electrical Test Specialist, he continued his career as a Senior Test Analyst for Northeast Utilities unregulated Test Group, Northeast Generation Services. In this capacity, he maintained or commissioned electrical distribution and generation apparatus to include protection and control relays for nuclear generators, merchant generators, hydro generators, pharmaceutical, Industrial and commercial customers. In 2004, Kevin joined the Northeast Utilities Transmission Group with an opportunity participate in the startup of the newly formed Transmission Test Department. During 2007, he participated in an opportunity to explore human error reduction with several consultants. Kevin has since co-championed a successful human error reduction effort within the Northeast Utilities Transmission Group.

When Kevin is not participating in completing plans to commission new protection & control relays, electrical apparatus, substations or switchyards with Northeast Utilities Project Teams or serving as the Supervisor for the Transmission Construction, Test & Maintenance Department, he is a father to three girls, husband to his wife of 22 years and

friend to many. Additionally, He is an avid scuba diver and enjoys traveling the world exploring the oceans.

- Associate Degree in Electrical Engineering Technology, 1985.
- Certified with Practicing Perfection Institute, Cert. # 014, 2007.
- Bachelor of Science degree in Management, University of Phoenix, graduated with Honors in 2009.
- Boston University Certificate in Project Management, 2010.

David W. Bowman

David Bowman has 22 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 firm believer that companies can and will improve their overall performance if they enhance their behavioral culture.

J. Patrick O'Neil



Pat is a graduate of Grove City College, US Navy Nuclear Power School, and Westminster Theological Seminary. He has worked in Performance Improvement for Entergy, Exelon and is now Sr. Project Manager, Performance Improvement, Human Performance and Corrective Action Program, for the Generating Group of Tennessee Valley Authority (TVA). Pat

and his wife have eight children and his oldest son was married Saturday.

Dr. Mica Endsley



Dr. MICA R. ENDSLEY is President of SA Technologies, a cognitive engineering firm specializing in the analysis, design, measurement and training of situation awareness in advanced systems, including the next generation of systems for aviation, air traffic control, medical, power, military operations, homeland security, and cyber. Dr. Endsley received a Ph.D. in Industrial and Systems Engineering from the University of Southern California. Prior to forming SA Technologies she was a Visiting Associate Professor at MIT in the Department of Aeronautics and Astronautics and Associate Professor of Industrial Engineering at Texas Tech University. She has authored over 200 scientific articles on situation awareness, decision making and automation. She is co-author of *Analysis and Measurement of Situation Awareness* and *Designing for Situation Awareness*. She is currently serving as President of the Human Factors and Ergonomics Society.

Roman Carter



Roman Carter is Manager of NERC's Bulk Power System Awareness Department. Roman joined NERC in March 2009 after a 26 year career at the Southern Company.

The Bulk Power System Awareness Group is responsible for monitoring the realtime status of the bulk power system and collecting and analyzing information on system disturbances and other incidents that have an impact to the bulk power system. The Group disseminates this information

to internal departments, registered entities, regional organizations and governmental agencies.

Roman began his professional career working for Southern Company where he held a number of professional and supervisory positions in the Power Delivery, Generation, and Transmission organizations. While working in Power Delivery, he designed and provided oversight for the installation of overhead and underground distribution systems.

In Generation, he was project manager in the Fleet Optimization group performing generation unit commitment and economic dispatch, load forecasting, and coordinated planned and maintenance generation outages.

In the Transmission group, Roman was responsible for Southern's adherence to NERC's reliability standards for the RC, BA, and TOP reliability functions. He was also responsible making BPO "audit ready" and coordinating Southern's Compliance Audits, monitoring the standards development and standards balloting process.

Roman holds a Bachelor of Science Degree in Mechanical Engineering from Auburn University and a Master of Science Degree in Mechanical Engineering from the University of Alabama. He also has a Minor in Mathematics. Roman has been a NERC certified System Operator at the highest (Reliability Coordinator) level since 2002 and is a member of IEEE.

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. Legatt has been a programmer for over twenty years. He has a Ph.D. in clinical health psychology/neuropsychology from

the Ferkauf Graduate School of Psychology/Albert Einstein College of Medicine.

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.

His development of the Macomber Map® has been featured in the New York Times 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.

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.

Mr. Legatt is currently pursuing a graduate degree in energy systems engineering at the University of Texas at Austin.

Email: (mlegatt@ercot.com)

Dr. Jodi Heintz Obradovich



Dr. Jodi Heintz Obradovich received her Ph.D. in Cognitive Systems Engineering at the Ohio State University in 2001. Her research interests include understanding how human and team cognition contributes to success and failure in complex, high-risk systems. She has explored collaborative virtual work as it occurs in

the aviation domain between F.A.A. Traffic Managers and airline dispatchers, as well as in the U.S. Army among commanders and subordinates. She worked as lead human factors engineer in Intel Corporation's Digital Health Group. Her work at Intel included understanding nurses' and physicians' workflow as it occurs in acute healthcare settings to inform design of mobile technology, and designing an in-home health monitor to aid individuals suffering from chronic disease. She also explored the challenges that virtual teams located around the world encounter as they collaborate with one another and coordinate their work. She is currently a Scientist at Pacific Northwest National Laboratory in the Energy and Environment Directorate, where she is working on projects that include understanding the workflow and information requirements of real-time control room operators and designing technology to aid them in their problem solving and decision making as they manage the Electric Grid.

