44TH TURBOMACHINERY & 31ST PUMP SYMPOSIA
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GEORGE R. BROWN CONVENTION CENTER

Application of Multi-Megawatt Medium Voltage Motor & Adjustable Speed Drive Packages for Reliable Compression

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We drive industry

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Manish Verma –
TMEIC Corporation

Manish Verma graduated in 2006 from Virginia Tech with BSEE. He began his career with TMEIC in 2006 while continuing his professional education. In 2009 he completed his MSEE with concentration in power. After a broad exposure and education in the various TMEIC business units, he joined the global drives division, with concentration on sales and application engineering, new product developments and drive enhancements. His responsibilities include power systems and electronics, adjustable speed drives, and technical training. He is an active member of IEEE and has authored technical papers for several conferences.

Neeraj Bhatia – Bechtel OG&C

Mr. Bhatia is presently Chief Electrical & Telecom Engineer, of the Oil Gas & Chemical GBU (Global Business Unit) of Bechtel Corporation in Houston, Texas. He has worked over 25 years in a variety of Oil, Gas, Chemical & Power Facilities including- LNG Liquefaction facilities, power, air separation plants, petrochemical plants, downstream projects, gas processing plants, and steel and industrial plants. His experience includes engineering management, supervision, field construction and commissioning of electrical power generation, distribution, and control and automation systems. Mr. Bhatia has a Master of Technology from Indian Institute of Technology and a Bachelor of Electrical Engineering and is a licensed Professional Engineer in the State of Texas. He is an IEEE Senior Member and has worked in the area of K-12 STEM education through the Fort Bend Independent School District. Mr. Bhatia received the 2010 best application paper award from The International Gas Turbine Institute (ASME) and was the recipient of the Award of Merit presented by Bechtel in recognition of continuing contribution of Bechtel Technical Information program.

Barry Dick –
TMEIC Corporation

Barry has worked for TMEIC Corporation and previously with GE Drive Systems for over 31 years. Barry has authored IEEE industry papers in several drives and motors areas. Over his career, he has applied his skills in configuring and specifying marine and industrial drives and automation systems. His fields of concentration now include high power AC and DC drives, large motors, and specialty power conversion systems. His efforts are key in guiding TMEIC's development of new drive systems products and configurations. He has applied his analytical strengths to perform drive-train torsional analyses and harmonic analyses, study and report on the potential impact from drive and motor starting on utility, and led efforts in specialized harmonic filter designs.

James Nanney – TMEIC Corporation

James Nanney graduated in 1979 from Texas A&M with a bachelor's in industrial distribution. He has been involved with the design, manufacture, application and selling of low and medium voltage motors with Baldor Electric, Hyundai Ideal and World Wide Electric. Currently, he is working with TMEIC Corporation as a Technical Sales Manager. His responsibilities include specifying and applying medium voltage motors for critical oil & gas applications such as: turbo compressors, pumps, fans, extruders etc.

Short Course Agenda

- **PART I: Medium Voltage Electric Motors**
  - Basic terminology
  - Induction & Synchronous Motors
  - Review of motor standards, third party approvals
  - Hazardous area motors & testing
  - Motor accessories & Options
  - When to use induction versus synchronous

  Questions

  BREAK

- **PART II: Medium Voltage Adjustable Speed Drives**
  - What is an ASD, how does it work & its benefits
  - ASD topologies, evolution and major differences
  - ASD application overview, review of standards
  - ASD protection & cooling methods
  - ASD cabling & grounding
  - Installing ASD's in power center building (E-House)

  Questions

  BREAK

Short Course Agenda – Cont'd

- **PART III: Motor & ASD Package**
  - How to specify a Motor and ASD package
  - Typical ASD test procedures
  - String testing, benefits, implications, cost drivers
  - How to evaluate reliability of a Motor and Drive package

Questions

END