SAND2011-6457P

2011 Wind Turbine Reliability Workshop

Operations-Driven Reliability and the Journey to Excellence: How Quality, Data and Analysis Benefit Operations and Maintenance

Day 1

7:30-8:30am Continental Breakfast

8:30am

The National Perspective: Executive Leadership Acting to Improve Wind Plant Reliability

As a dynamic wind turbine market matures reliability is more important than ever. Leading executives will set the stage for the necessary ingredients for continued progress. National programs, regulatory frameworks, market forces and the role for R&D supported by data analysis will build the foundation for an in-depth workshop on having a US fleet of wind plants dependably generating a bright future.

Roger Hill, *"Welcome to the 2011 Wind Turbine Reliability Workshop"*, Sandia, workshop chairman
Bill Woldman, *"A letter from Senator Udall",* Field Representative, Office of Senator Tom Udall
Steve Chalk, *"Perspectives",* Deputy Assistant Secretary of Renewable Energy, Department of Energy
Jon Wellinghoff, *"Keynote Address"*, Chairman, Federal Energy Regulatory Commission
Rick Stulen, *"Overview of Energy and Wind Activities at Sandia"*, Vice President, Sandia National Laboratories
Q&A
Bridget McKenney, *"Recognitions",* Sandia

10:30-11:00am Mid-morning break

11:00am Session continued

Sal Della Villa, *"Acting to Improve Wind Plant Reliability',* Strategic Power Systems
Werner Götz, *"EnBW Baltic 1 Germanys First Commercial Offshore Experience"* Energie Baden-Württemberg (EnBW)
Marty Crotty, *"Optimal Performance through Data Analysis and Performance Engineering"*, Upwind Energy
Q&A, Discussion

12:30-1:30pm Lunch

1:30pm

The Grid Connection: Redefining Wind's Role in Reliability of the Nation's Largest Machine

The reliable and expeditious delivery of wind energy to customers across the US presents a challenge. Wind penetration levels of 20% or more will necessarily require an infrastructure that accepts and delivers the energy into appropriate market structures. Transmission is key to accessing highly energetic wind resources and connecting to the load centers, while balancing other generation assets.

Charlton Clark, Department of Energy, moderator
John Lawhorn, "*Renewable Integration MISO"*, Midwest ISO
Abraham Ellis, *"Integrating Variable Generation into the Grid"*, Sandia
Q&A, Discussion

3:00-3:30pm Afternoon break

3:30pm

Operations and Maintenance: Sustaining Operations for Sustainable Systems [Panel]

Managing wind plants poses the logistical challenge of operating many large, complex, electricity generating devices and collecting the output energy for seamless integration into the utility system. Operators will share their reliability observations ranging from the practical to analytical.

Bridget McKenney, Sandia, moderator
Dick Williams, Shell Wind
Ninochska Maldonado, enXco,
Eduardo Perez, Wind Capital Group
Panel Discussion, Q&A

4:45pm

Day 1 Closing Statements

5:00pm Adjourn

Day 2

7:00-8:00am Continental Breakfast

8:00am

Data to Information to Profits: Reliability Analysis from Data Collection

Frequency, duration, and consequence of events (how often, how many, how much) are key to establishing baseline statistics for reliability performance. Discussions will investigate not only how to feed critical information to improve operations, and guide technology improvement efforts.

Valerie Peters, "*CREW Reliability Benchmark; Initial Findings and Lessons Learned",* Sandia, moderator
Bob Sherwin, *"Work in the IEC on Wind Turbine Availability"*, EAPC Wind Energy
David Zeglinski, *"Real-Time Data Infrastructure for Large Scale Wind Fleets –Return on Investment vs. Fundamental Business Requirements",* OSIsoft
Phillipp Lyding, *"Establishing a Common Database for Wind Turbine Failures",* Fraunhofer IWES
Q&A, Discussion

10:00-10:30am Mid-morning break

10:30am

What's Happening with Major Components? Looking at the Source of Turbine Reliability

The major components are the organs of the turbine system. Their effectiveness drives expectations for turbine efficiency and power performance. The DOE has partnered with industry to address these issues through specific program efforts.

Paul Veers, NREL, moderator
Hal Link, *"Gearbox Reliability Collaborative",* NREL
Shawn Sheng, *"Investigation of Various Wind Turbine Drivetrain Condition Monitoring Techniques",* NREL
Josh Paquette, *"Update on the Sandia Blade Reliability Collaborative",* Sandia
Q&A, Discussion

12:00-1:00pm Lunch

1:00pm

Innovative Manufacturing and Supply Chain Concepts: How to Balance Novel Component Designs and Still Ensure Reliability [Panel]

From design to market is considerable undertaking. With the investment of millions of dollars, how does R&D, standards, testing and certification all come together to advance technology and simultaneously deliver quality and reliability? A panel of wind industry experts will address these questions and more as they share insights on qualification requirements of suppliers, and the "adjacent space" of R&D.

Dan Radomski, Kinetik Partners, moderator
Kyle Wetzel, Wetzel Engineering
Karen Schultz, Walco Tool
Panel Discussion, Q&A

2:15-2:45pm Afternoon break

2:45pm

Exciting Concepts in Development and the Field: New Systems and Components for Improved Performance

Roger Hill, Sandia, moderator
Ashley Crowther, *"Application of Modern Engineering Design Tools for Reliability in Wind Turbine Rotating Machinery",* Romax Technology
Chris Bley, *"Blade Vital Signs-Increasing Reliability and Output with Ongoing Inspection, Repair and "Tune-up" Strategies"*, Rope Partners
Jon White, *"Advanced Wind Rotor and Turbine-Turbine Test Facility"*, Sandia
Q&A, Discussion

4:15pm

Workshop Wrap-up

4:45pm Adjourn

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