

Tuesday – October 3, 2006

Why are we here?

Welcome and Purpose of the Workshop – Roger Hill (SNL)

Research and Development Roles – Sandy Butterfield (NREL)

Benchmarking Reliability and Industry Activities – Thomas Jonsson (AWEA O&M Working Group Chairman)

Managing Costs of Unreliability

Managing Wind Turbine Generation O&M Costs Through Failure Prediction and Proactive Maintenance – Mike Smith (enXco)

Potential Wind Turbine Reliability Affects on a Project Pro Forma – Bill Vachon, (W.A. Vachon & Associates, Inc.)

An Owner's Perspective – Neal Emmerton (Babcock & Brown)

Reliability Impact of Distributed and Renewable Energy Resources: Case Study – David Robinson (SNL)

Perspectives for Reliability Improvements

Wind Turbine Reliability and Service Improvements – Ben Bell (Bell Windpower)

Utility Wind Interest Group Wind Turbine O&M User Group – Steve Wotruba (Energy Northwest)

North American Wind Research and Training Center – Dr. Phillip O. Barry (Mesalands Community College) [Spoken Address]

Gearbox Issues

Gearbox Repair Experiences – Thomas Jonsson (Moventas)

NOTE: 12.4MB pdf file also available with embedded videos.

Lubrication...How's That Working For You? – Brian O'Connor (Lubrizol Corporation)

Wind Turbine Gearbox Reliability – Brian McNiff (Gear Engineers, Inc.)

Wind Turbine Gearbox Reliability Collaborative – Walt Musial (NREL)

Controls, Power Electronics and Generators

Conclusions from NREL Predictive Maintenance Management Workshop – Sandy Butterfield (NREL)

Generator & Electrical System Reliability – Hal Romanowitz (Oak Creek Energy Systems, Inc.)

Accelerated Life Testing of Generator Insulation Systems – Bill Erdman (BEW Engineering, Inc.)

Wednesday – October 4, 2006

Reliability Review

Yesterday's Recap–Review of Key Points – Roger Hill (SNL) [Spoken Address: See *Meeting Notes* below]

The Link Between Land-based Reliability and Offshore Systems – Walt Musial (NREL)

Pitch Systems

Pitch Systems: Overview and Introduction – Ed Hahlbeck (Powertrain Engineers, Inc.)

Factors Influencing Wind Turbine Reliability in Pitch System Designs – Paul Rowan (MLS Electrosystem)

Yaw & Pitch System Lubrication – Brian Richards (SKF Vogel)

Blades: Larger and Lighter, How Reliable?

Blade Issues, Reliability & Innovations – Tom Ashwill (SNL)

Lightning and Other Stuff That Bother Wind Turbines – Brian McNiff (McNiff Light Industry)

Economic Benefits of Scheduled Rotor Maintenance – Gary Kanaby (Knight and Carver)

Reduced Turbine Costs in the Life Cycle

O&M Cost Model: Quantifying the Influence of Reliability – Chris Walford (Global Energy Concepts)

Crane Considerations Related to Maintaining Wind Turbines – Bill Vachon (W.A. Vachon & Associates, Inc.)

Reduced Turbine Costs in the Life Cycle (continued)

Design for Maintenance – Ed Hahlbeck (Powertrain Engineers, Inc.)

Condition Monitoring as a Tool for Reliability/O&M – Harry Timmerman (SKF)

Operators' Remarks

Improving Wind Farm Performance Using Reliability Centered Maintenance – Chanda Kapande and Robert O'Brien (B9 Energy)

Managing the Fleet: 600kw to 800kw Turbines – Dean Landon (Caithness Energy)

Group Discussion, Wrap-up

Meeting Notes of the 2006 Wind Turbine Reliability Workshop – Roger Hill