Scaled Wind Farm Technology
(SWiFT) Facility

SAND2013-5289P

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Scaled Wind Farm Technology Facility Commissioning

Tuesday, July 9, 2013

Reese Technology Center | Lubbock, Texas

U.S. DEPARTMENT OF ENERGY · Vestas · Sandia National Laboratories · TEXAS TECH UNIVERSITY · NIR

Agenda

9:15 am **Welcome and Introductions**

Kent Hance, *Chancellor*
Texas Tech University System

Opening Remarks

M. Duane Nellis, *President*
Texas Tech University

9:30 am **Wind Plant Challenges and Opportunities**

Jose Zayas, *Director*
U.S. Department of Energy Wind and Water Power Technologies Office

10:00 am **Wind Plant Industrial Perspective**

Anurag Gupta, *Chief's Office*
Product Integration and Controls
Vestas Wind Systems

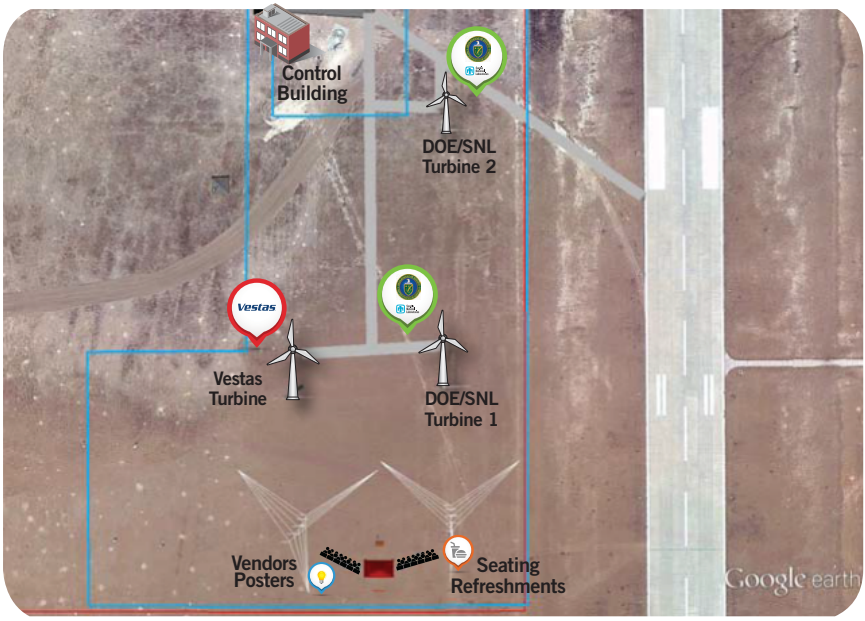
10:15 am **SWiFT Commissioning**

J. Steven Rottler, *Vice President*
Energy, Climate, and Infrastructure Security, Sandia National Laboratories

10:30 am **Closing Comments**

Kent Hance, *Chancellor*
Texas Tech University System

Facility Map



Posters

1. SWiFT Facility Overview
2. SWiFT Construction Partners
3. Wake Measurement System
4. Radar Interagency Field Test & Evaluation
5. Continuous Reliability Enhancement for Wind (CREW)
6. Sandia Wind Energy Technologies Department Overview
7. SWiFT Control and Data Acquisition
8. Texas Tech University Ka-Band Radar Overview
9. Sandia Marine Hydrokinetics, Offshore Wind, and Conventional Hydropower
10. Dynamic Testing and Characterization ATA Engineering, Inc.
11. Group NIRE
12. Blade Reliability Collaborative
13. Sandia Blades and the National Rotor Test Bed
14. Texas Tech University National Wind Institute

Speaker Biographies

Kent Hance, Chancellor, Texas Tech University System

In 2006, Hance became chancellor of the Texas Tech University System which is comprised of Texas Tech University, Texas Tech University Health Sciences Center, Angelo State University, and Texas Tech University Health Sciences Center at El Paso. His priorities are growing enrollment and increasing research. Recently Hance completed a $1 billion capital campaign. He is a former Texas State Senator and United States Congressman. In 1981, Hance authored and won passage of President Reagan's tax bill, which still remains the largest tax cut in the history of the world. As a member of Congress, Hance also served on the Ways & Means Committee and the Science & Technology Committee. Before his political career, Hance was a faculty member at Texas Tech University for five years.

TEXAS TECH UNIVERSITY

M. Duane Nellis, President, Texas Tech University

M. Duane Nellis was named as the 16th president of Texas Tech University on March 22, 2013. Nellis comes to Texas Tech from the University of Idaho, where he began serving as president in July 2009. There, he was instrumental in producing record student enrollments, gaining national recognition of the university research mission with dramatic funding increases, and extending university programs to benefit the people of the state educationally and economically.

He is recognized nationally and internationally for his research that utilizes satellite data and geographic information systems to analyze various dimensions of the earth's land surface. His research has led to more than 100 articles and reports in a wide range of professional

Speaker Biographies

journals, and 17 books and book chapters. He has given more than 100 professional presentations and has been invited to speak at more than 60 universities and related settings internationally.

Nellis earned his bachelor's degree in earth sciences/geography at Montana State University. He received his master's and doctoral degrees in geography from Oregon State University.

Jose Zayas, Director, U.S. DOE Wind and Water Power Technologies Office

As Director of the Wind and Water Power Technologies Office in the Office of Energy Efficiency and Renewable Energy (EERE) at the Department of Energy (DOE), Mr. Zayas manages efforts to improve performance, lower costs, and accelerate deployment of wind and water power technologies, which can play a significant role in America's clean energy future. In working with DOE's national laboratories, academia, and industry, the program funds research, development, and deployment of wind and water power systems through competitively selected, cost-shared projects with businesses, federal, state, and other stakeholder groups.

Prior to his arrival at DOE, Mr. Zayas was the senior manager of the Renewable Energy Technologies group at Sandia National Laboratories, where his responsibilities included establishing strategy and priorities, defining technical and programmatic roles, business development, and performing management assurance for the renewable energy-related activities of the laboratory.

Mr. Zayas holds a Bachelor of Science in Mechanical Engineering from the University of New Mexico and an Master of Science in Mechanical and Aeronautical Engineering from the University of California at Davis.

U.S. DEPARTMENT OF ENERGY

Speaker Biographies

Anurag Gupta, Chief's Office, Product Integration and Controls

In the Chief's Office in Vestas's Product Integration and Controls (Engineering Solutions) organization, Dr. Gupta guides organizational and technology strategies needed for efficient and effective realization of its goal of grid-parity for wind energy. Until recently, as Director in the Advanced Technologies unit, Dr. Gupta led a global Aerodynamics, Controls and Structures R&D team developing rotor technologies for Vestas next-gen wind power plants—and creating accelerator platforms (such as SWiFT) via collaborations with national labs, industrial partners and universities to speed new concepts to market.

Prior to joining Vestas in 2011, Dr. Gupta spent 11 years at GE Global Research where he managed various R&D labs in the energy and propulsion group, delivering concepts and capabilities to GE businesses across the fluid dynamics, aeroacoustics, heat transfer and CAE spaces. He built the Wind aero research program at GEGR and led CFD and turbomachinery design technology projects amongst others.

Dr. Gupta earned his Ph.D. in Aerospace Engineering from the Georgia Institute of Technology in 1999 and holds a bachelor's degree in mechanical engineering from the Birla Institute of Technology and Science in India. He has published numerous papers and patents in the areas of CFD, hypersonics, optimization, propulsion systems, turbomachinery and wind turbine fluid mechanics.

Vestas

Speaker Biographies

J. Stephen Rottler, Vice President, Energy, Climate, and Infrastructure Security Sandia National Laboratories

Dr. J. Stephen (Steve) Rottler is vice president of Sandia's California laboratory and serves as lead for the Laboratories' Energy, Climate, and Infrastructure Security business unit. The Energy Security program works to reduce the risks of transformative energy solutions that will enhance the nation's security and economic prosperity. The Climate Security program works to understand and prepare the nation for the national security implications of climate change. The Infrastructure Security program develops and applies technologies/analytical approaches to secure the nation's critical infrastructure against natural or malicious disruption. The Enabling Capabilities program is the capability base that supports ECIS and champions science at Sandia.

The California laboratory's principal programs include nuclear weapons stewardship, home-land security with a focus on defending against weapons of mass destruction, combustion, transportation and hydrogen energy research, biology, and advanced computational and information systems.

Prior to moving to Sandia's California laboratory, Dr. Rottler guided corporate research and development efforts as Chief Technology Officer and Vice President, Science and Technology. He also managed technology transfer and strategic research relationships with universities, industry, and the State of New Mexico.

Dr. Rottler received his B.S., M.S., and Ph.D. degrees in Nuclear Engineering from Texas A&M University in 1980, 1982, and 1984, respectively. He has published papers, reports, and conference presentations on the development and application of computational radiation-hydrodynamics codes.

Sandia National Laboratories

Vendor Tables

The following representatives will be available at the vendor tables:

- **ABB**—Power Electronics and Generators
- **ATA Engineer**—Modal analysis and engineering services
- **Broadwind Services**—Complete wind turbine services
- **FT Technologies**—Nacelle-based sonic anemometers and lidar
- **Group NIRE**—Renewable energy development
- **Micron Optics**—Fiber optic sensing
- **National Instruments**—Integrated control and acquisition systems
- **NextraTEC**—Wind energy technology and business development

Thank you to the many individuals who have made the Commissioning a success. A special thanks to Anna Young, Associate Managing Director of the Texas Tech University National Wind Institute, without whom this event would not have been possible.

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