



IEEE POWER ENGINEERING SOCIETY

WIND POWER COORDINATING COMMITTEE

CHAIR

Richard Piwko
GE Energy
One River Rd
Schenectady, NY 12345
Tel: 518-385-7610
richard.piwko@ge.com

VICE CHAIR

Dale Osborn
Midwest ISO
1125 Energy Park Drive
St. Paul, MN 55108
Tel: 651-632-8471
dosborn@midwestiso.org

SECRETARY

Robert Zavadil
EnerNex Corporation
620 Mabry Hood Road, Suite 300
Knoxville, TN 37932
Tel: (865) 218-4600 ext. 6149
bobz@enernex.com

Wind Power Coordinating Committee (WPCC) Meeting

IEEE PES General Meeting – Detroit MI

Thursday, July 28 2011

8:00 am – 12:00 noon

Minutes

Part I: WPCC Administration

1. Review minutes of previous meeting

- No comments
- Minutes approved

2. PES GM Review

The number of wind and renewable energy sessions and meetings at PES continues to grow. Table 1 details the events held at this meeting.



Table 1: Wind and Renewable Energy Sessions at 2011 PES General Meeting

Monday 1:00 – 3:00	Panel Session: Wind Facility Modeling 1 (EMC)
Monday 2:00 – 5:00	Panel Session: Education & Research on Integration of Renewable Resources into Power Systems (P&EEC)
Monday 2:00 – 5:00	Panel Session: Advancements in Power Systems Operations with Variable Generation (PSOC)
Monday 3:00 – 5:00	Panel Session: Wind Facility Modeling 2 (EMC)
Tuesday 8:00 – 11:00	Panel Session: 10WG E3: Europe: Improving Transmission Capacity of a Power System with a High Level of Distributed and Renewable Generation – Dynamic Network and Protection Security, Assessment and Measurement (ED&PG)
Tuesday 8:00 – 11:00	Panel Session: Renewable Energy in Developing Countries (ED&PG)
Tuesday 8:00 - 10:00	Panel Session: Wind Plant Collector System Design (T&DC)
Tuesday 8:00 - 10:00	Combo Session: Distribution–Distributed Resource Integration WG (T&D)
Tuesday 9:00 - 12:00	Panel Session: Wind Integration – System Issues for Frequency Regulation and Inertial Response (WPCC&PSDPC)
Tuesday 10:00 – 12:00	Panel Session: Wind Plant Short-Circuit Contributions (T&DC&PSRC)
Tuesday 1:00 - 3:00	Panel Session: Specification and Acceptance of Generators for Wind turbines 1 (EMC)
Tuesday 1:00 - 3:00	Panel Session: Standards and Interconnection Requirements for Wind and Solar Generation (T&DC)
Tuesday 2:00 - 5:00	Panel Session: Transmission Plans for Large Renewable Integration in US Midwest (PSP&IC)
Tuesday 2:00 - 5:00	Panel Session: Unit Commitment Solutions with High Penetrations of Wind Power (WPCC&PSOC)
Tuesday 3:00 - 5:00	Panel Session: Specification and Acceptance of Generators for Wind Turbines 2 (EMC)
Wednesday 8:00 - 10:00	Panel Session: Impact of LVRT on Wind Machines (EMC)
Wednesday 8:00 – 12:00	Combo Session: PSPI Committee Main/Planning for Integration of Renewable and Distributed Energy Resources (PSP&I)
Wednesday 8:30 - 12:00	Panel Session: Power System Flexibility (WPC)
Wednesday 1:00 - 4:00	Panel Session: Mathematical Modeling for Renewables Integration Studies (PSA&C&E)
Wednesday 1:00 - 5:00	Combo Session: PSDP Working Group on Dynamic Performance of Wind Power Generation and Panel Session on Wind Turbine and Power Plant Model Validation (PSDP)
Wednesday 2:00 – 5:00	Super Session - Panel: Wind Power and Solar (T&D)
Thursday 8:00 - 12:00	Paper Session: Impact of High Wind Power Penetration on System Dynamics (PSDP)

3. TCPC Report

- Nothing significant to report

4. Status of WPCC Web Page

- Page is up and running
- Contains minutes, contact information for other PES groups with wind-related activities

Part II: WG, TF, and Liaison Reports - Broad Coordination Discussions

5. Wind WG & SC Reports

WG on Renewable Technologies (EDPD)

- No report; meeting underway right now

Wind Modeling (PSDP)

- Good panel session - modeling & model validation, based on two WG papers
- Discussed next-generation of generic models
- Panel session on SSR/SSCI; will coordinate with T&D committee
- Pouyan Pourbeik will coordinate with WPCC
- T&D general systems have focused on EMT models, not connected with wind industry

Collector System Design

- Had panel session with 3 WG papers; well attended
- Met yesterday; plan 4 WG papers for 2012
- Have developed 12 papers to date
- Looking for other venues to pull in some more solar people
- Considering tutorials? Had one last summer
- 4 new papers:
 - Grounding transformer application
 - Collector system protection
 - Standards
 - Terms, definitions, abbreviations

Capacity value of wind generation

- Not a lot to report; short meeting upcoming
- Will be talking about solar, what to do
- Did get transactions paper published
- Risk, Reliability (?PSACE);
 - NERC LOLE working group follow-on being evaluated
 - "shell" proposal for possible panel next year; solar & methodology issues

Short-circuit current from wind generators

- Had panel session Wednesday



- 5 presentations
- Very well attended - 100+; room was too small
- WG meeting today
- Have developed rough draft; discovered "hole" in knowledge that requires some background investigation; challenges coordinating with PSRC because of meeting schedule
- Super Session on Wind & Solar - eclectic mix of papers, only about 30 in room for 500; WPCC does not get involved since this is initiated at TC level
- Comments:
 - Charlie & Anje: recall participation in organizing some previous super sessions
 - Bob Nelson: covering all turbines was too much; maybe focus on one type?

Protection of WTGs from lightning and surge

- Created WG to develop guidance document; actual IEEE guide, have PAR
- Focus is on turbine side (<1000 V); Reigh has been asked to look at MV arrester applications in wind plants (C62?)
- Also looking at solar side

Integration of Renewable Energy into T&D Grids Subcommittee (T&D)

- Update on panel/paper sessions
- Will be meeting Thursday pm

Task Force on Integration of Wind and Solar Generation into Power System Operations (PSO)

- Group's sole mission has been to plan a panel session or two for each meeting
- See no need to go much beyond that at this point
- Panel sessions have gone well

Renewable Energy Machines and Systems Subcommittee(EM)

- Had 4 panels at GM2011
 - Models - well attended
 - Certification
 - LVRT
 - Marine Energy
- Planned SC activities
 - Renewable energy machine technology
 - Power electronics
 - Modeling
 - Hydro-kinetics

Wind and Solar Plant System Impacts and Interconnection Requirements

- See above report (T&D)

Other

- Task force on worker safety (Collector System Design WG)
- OSHA is enforcing safety standards for wind plants; cooperating with AWEA



- Somebody from EM is considering a grid code activity
- Comments again made about room size
 - TCPC function
 - Sponsor suggests required room size
 - PES complained about "lack of rooms" at GM 2011
 - Recommend that people ask for 200 (Dick); not always granted; default number is 30
 - Dick will take action item to talk with TC about room allocation

6. NERC IVGTF Update (Charlie Smith)

- In Phase II to follow up on 12 recommendations from initial report
- Planning, Probabilistic methods, interconnection, operations
- Phase II reports are available on NERC web site
- All reports done by end of year

7. PES Special Wind Power Issue (Charlie Smith)

- 4th biennial issue (Nov/Dec)
- 7 articles, all articles are in

8. Liaison Reports

UWIG

- (KC & Maui for 2011); about 120 people at each
- UG overview
- Special topical workshop in June on Market Operations; Energinet.dk co-sponsor

AWEA - no report

NERC - no report

CIGRE - no report

IEA Wind Integration Annex (O'Malley)

- Going for 3rd term(2012-2014)
- Liaison with IEEE improving; papers

NREL

- Lot of things going on;
- Beginning second phase of WWSIS
- Preparing for EWITS II
- Analyzing thermal plant cycling

ENSO-E

- European operators
- Three committees



- Cooperation with ...
- Final report at end of 2012
- High on European political agenda
- Grid code (out in September)
- Development plan
- SuperGrid 2050 - getting started
- Striving for more cooperation in renewables across committees

Special Issue of Transactions

- Sustainable Energy
- 150 abstracts received; reviewed for 25 to publish
- Publication date next year

Part III: New Business & Future Directions

9. Upcoming Meetings

- T&D Conference (Orlando, May 7-10)
- PES GM (San Diego, July 22-26)
- Discussion
 - What about repeating panel for different audience (e.g. Wind Short-Circuit for T&D)?
 - WPCC can assist in making that happen
 - TCPC David Jacobsen
- WPCC thoughts - PES GM 2012
 - What about something on storage? Opportunities and Challenges for Storage? (Reigh & Mark)
 - Bulk Renewables & Smart Grid (Bob Z. & Erich G.)?
- Other thoughts
 - Testing standard for large turbines
 - New grid code requirements for wind generation/interconnection requirements
 - Markets topic
 - (Russ Philbrick) Dynamic reserve allocation, dynamic line rating, algorithmic approaches to increasing flexibility; looking for PSO to take lead
 - Offshore Transmission (Anje); what about T&D? WPCC will co-sponsored if desired
 - Regulation, BAAL, etc. - Michael Milligan will work with PSO

10. WPCC Scope Amendment

- Proposed scope expansion to TC; approved 7/27
- What about marine energy? Discussed last time, decided to leave with emerging technologies committee
- Solar scope focused on "plants" - grid interconnection and integration



11. New Working Groups/Projects/Activities

Original Priorities

- Capacity Value (WG exists)
- Standardized Wind Generation Models for System Planning Studies (WG exists)
- Collector System Design Considerations for Wind Farms (WG exists)
- Power System Operations with Variable Wind Resources (WG exists, sponsored a few panel sessions)
- Market Design with Consideration for Intermittent Wind Resources
- Transmission Investment Alternatives to Serve Remote Wind Sites

New SPD working group - pursuing standard.

- Should others be considered?

Right priorities? Industry directions? Gaps? Some ideas:

- PSO WG paper: Effects of emerging control performance standards (e.g. BAAL) on regulation and reserve requirements for wind and solar
- T&D WG Paper: HVDC transmission for offshore wind plants.
- (Russ Philbrick): changing fleet (retirements) with high penetration
- (Michael) inducing flexibility in future power system
- MISO implementing a ramp capability check in DA commitment

IEEE "Experts Now";

- now e-Library
- IEEE encouraging development of 1-hour video tutorials - very specific topic
- Does that fit into what this subcommittee can coordinate?
- WPCC will investigate, communicate to other wind-related WGs

Investigate Wind 101 Tutorial for San Diego 2012

