



# Power Systems Engineering Research Center

## Industry Advisory Board Meeting

May 25-26, 2010

Washington State University, Pullman, WA

The [Power Systems Engineering Research Center \(PSERC\)](#) is a university-industry collaboration focusing on research and education needs in the electric power industry. Its Industry Advisory Board (IAB), composed of PSERC's industry members, meets twice per year with PSERC researchers and students to conduct Center business, and to engage in discussions about the Center's research and education activities. This is a stimulating meeting with presentations on research projects, discussions of research ideas, and conversations on current issues facing the electric power industry.

### Objectives

The objectives of this IAB meeting are to:

- Promote interaction among researchers, industry members, and students
- Communicate the status of current PSERC research projects and education activities
- Present research results and discuss ideas for new research projects.

### Attendees

The IAB meeting is attended by PSERC university researchers, industrial members, students and invited guests. Individuals from companies that are considering PSERC membership are invited to contact [PSERC](#) about attending.

### Meeting Highlights

Highlights of this meeting include:

- Presentations research results and posters on PSERC continuing research projects
- Discussions on current and future research
- Stem committee meetings with panel discussions
- Tutorial on "Smart Grid Opportunities: Converting Substation Data to Information"
- Tour of Schweitzer Engineering Laboratories
- Interactions with students

Our speakers from industry and academia bring a wealth of experience in the electric power industry. With times for formal and informal discussions, this meeting provides an excellent opportunity for networking as well as for information gathering and dissemination.

### Host

Our local host for the IAB meeting is Washington State University.



*World Class. Face to Face.*

# May 2010 IAB Meeting Agenda

**Tuesday, May 25** (Compton Union Building)

7:30 - 8:00      **Registration and Light Breakfast**

8:00 - 8:15      **Welcome to Washington State University**

8:15 - 8:45      **Director's Comments**

Vijay Vittal, PSERC Director, Arizona State University

8:45 - 10:15    **PSERC Project Presentations**

*Special Protection Schemes: Limitations, Risks, and Management*

Jim McCalley, Iowa State University; Chanan Singh, TAMU

*Using PMU Data to Increase Situational Awareness*

Tom Overbye, Univ. of Illinois at Urbana/Champaign; Pete Sauer, Univ. of Illinois at Urbana/Champaign; Chris DeMarco, Univ. of Wisconsin-Madison; Ian Hiskens, Univ. of Michigan; Bernie Lesieutre, Univ. of Wisconsin-Madison; Mani Venkatasubramanian, Washington St. Univ.

*Comparative Characterization of Parallel Distribution Sensors Under Field Conditions*

Don Russell, Texas A&M Univ.; Carl Benner, Texas A&M Univ.; Ward Jewell, Wichita State Univ.

10:15 - 10:30    **Break**

10:30 - 12:00    **PSERC Project Presentations**

*Technical and Economic Implications of Greenhouse Gas Regulation*

Ward Jewell, Wichita State Univ.; Shmuel Oren, Univ. of California at Berkeley; Chen-Ching Liu, Univ. of Dublin; and Yishu Chen, Univ. of California at Merced

**CERTS Project Presentations**

*Market Power Monitoring Metrics with Visualization*

Bernie Lesieutre, Univ. of Wisconsin – Madison; and Tom Overbye, Univ. of Illinois at Urbana/Champaign

*Real Time Wide Area Control*

Anjan Bose, Washington State Univ.

12:00 - 1:00    **Lunch**

1:00 - 2:00      **PSERC Project Presentations**

*The 21st Century Substation Design*

Mladen Kezunovic, Texas A&M Univ.; George Karady, Arizona State Univ.

*Substation of the Future: A Feasibility Study*

Sakis Meliopoulos, Georgia Inst. of Technology  
Anjan Bose, Washington State Univ.

2:00 - 3:30      **Poster Session with Discussions on On-Going PSERC and CERTS Projects**

3:30 - 5:15      **Closed Industry Meetings**

5:30 - 8:00      **Reception and Dinner** (Compton Union Building)

**Wednesday, May 26** (Compton Union Building)

- 7:30 - 8:00      **Continental Breakfast**
- 8:00 - 8:30      **Feedback from IAB Business Meeting**
- 8:30 - 10:00     **Markets Stem Committee Meeting**  
*Panel: Market Design Issues Raised by New Smart Grid Capabilities*  
(Panel being formed)
- 10:00 - 10:15    **Break**
- 10:15 - 11:45    **T&D Technologies Stem Committee Meeting**  
*Panel: Evolution of the Grid and Its Impact on T&D Technologies*  
(Panel being formed)
- 11:45 - 12:45    **Lunch**
- 12:45 - 1:45     **Tutorial**  
*Smart Grid Opportunities: Converting Substation Data to Information*  
Mladen Kezunovic, Texas A&M Univ.
- 1:45 - 2:00      **Break**
- 2:00 - 3:30      **Systems Stem Committee Meeting**  
*Panel: Planning Smart Grid Demonstration Projects – What’s Been Learned about Systems Research Needs*  
(Panel being formed)
- 3:30 - 6:00      **Tour of Schweitzer Engineering Laboratories with Reception Following**

### **Tutorial Description**

#### **Smart Grid Opportunities and Challenges: Converting Substation Data to Information**

The smart grid efforts are focused, among other tasks, on getting better use of abundant data coming from substations equipped with advanced intelligent electronic devices (IEDs) such as digital protective relays, digital fault recorders, remote terminal units of supervisory control and data acquisition systems, phasor measurement units, etc. As the amount of substation data increases in the future due to continued deployment of new IEDs with extensive recording capabilities, it becomes very important that the data integration and conversion to information be performed automatically. This requires full understanding of the properties of substation data. This tutorial focuses on better understanding the features of recording IEDs that affect data such as front-end data processing, accuracy, time synchronization, and eventually the conversion of data to information.

# Information for Planning Your Attendance at the IAB Meeting

## General Meeting and Registration Location

All meetings and the main registration desk will be located on the second floor of the Compton Union Building (CUB) on the Washington State University Campus. The primary meeting room is the CUB Junior Ballroom, and registration will be located just adjacent to the meeting room.

## Transportation to Pullman, Washington

Pullman is located in the heart of the Palouse country, only eight miles from the border of Idaho. The **Pullman/Moscow airport (PUW)** is served by the Alaska Airlines commuter (Horizon Airlines) with several flights daily to/from Seattle; this is the most convenient if your flight connections work out. The **Lewiston, Idaho Airport (LWS)**, 35 miles south of Pullman, is served by the Delta commuter from Salt Lake City twice a day. The nearest large airport served by all airlines is **Spokane International Airport (GEG)**, 80 miles north of Pullman. You will need to rent a car if you arrive Lewiston or Spokane. If you fly into Pullman, the host hotel provides complimentary shuttle service.

PUW: <http://www.pullman-wa.gov/airport/>

LWS: <http://www.lcairport.net/>

GEG: <http://www.spokaneairports.net/airline.htm>

Area Map: <http://www.mapquest.com/maps?city=pullman&state=WA&country=us>

## Hotel (Make your reservation not later than April 24)

Accommodations have been arranged at the **Holiday Inn Express**, 1109 SE Bishop Blvd, Pullman, WA 99163. Phone: **509-334-4437**. Be sure to mention the PSERC meeting to receive the group rate of \$99 standard or \$109 executive, and make your reservations before **April 24**.

## Transportation to Campus from the Hotel

The Holiday Inn Express is approximately a mile from our meeting location at the CUB at Washington State University. If the weather is as nice as it usually is in mid-May, you may choose to walk to central campus for the meetings. Be aware that campus is very hilly, so wear comfortable shoes if you choose this option.

The hotel also provides a complimentary shuttle to and from central campus.

## Driving to and Parking on Campus

The WSU Campus can be tricky to navigate, so we recommend you take the hotel shuttle or walk to the meeting site. However, there are several options for parking on the WSU Campus near the CUB requiring a fee for all visitors. Those who wish to have premium parking spaces will choose to park in the CUE garage or the Library garage at a rate of \$12 per day. Refer to the [map](#) for locations.

You may also choose to purchase a visitor permit which will allow parking in any Blue, Red, Yellow, or Green lot at a rate of \$4.97 per day. If you plan to purchase a visitor permit, please stop at the WSU Visitor Center on the corner of Davis Way and Grand Avenue to obtain the permit and maps prior to driving to campus.

For maps and more parking information visit the web sites (the hotel also has maps):

Visitor Parking: <http://www.parking.wsu.edu/VisitorParking>

Map: <http://www.parking.wsu.edu/Map>

Hint: the Compton Union Building or CUB is in central campus, next to the purple library parking on the map in the left 1/3<sup>rd</sup> of the [map](#). Students and staff are quite friendly and willing to help you find your way if you get lost. Don't hesitate to ask for directions.

### **Tour of Schweitzer Engineering Laboratories**

[Schweitzer Engineering Laboratories](#) (SEL) is a world leader in digital protection relays, phasor measurement units and related technologies. Their main manufacturing facility is in Pullman, WA. A tour of these facilities has been arranged by SEL for the IAB meeting attendees. This tour is scheduled right after the end of the meeting on campus in the late afternoon of Wednesday, May 26.

Following the tour SEL has invited all the attendees to a reception/party on their premises.

### **Tuesday evening banquet**

WSU is proud to invite you to join us on Tuesday night for a reception and dinner. The dinner will be hosted by AREVA T&D, and catered by students of the Hospitality Business Management School. The menu will consist of a choice of salmon or vegetarian, and will feature local foods of the Palouse and the Northwest.

### **Registration (\$200 until May 4. \$275 afterwards. [Register on-line today!](#))**

The early registration fee is \$200 for all IAB members, faculty, staff, and invited attendees. After May 4, the registration fee will be \$275. The fee is waived for students. The fee covers your meals, breaks, receptions and materials. There is a \$40 charge for your dinner companion on Tuesday night.

We invite individuals from organizations that would like to consider PSERC membership to join us. Before registering, please contact Dennis Ray PSERC Executive Director, at 608-265-3808 or [djray@engr.wisc.edu](mailto:djray@engr.wisc.edu).

### **Additional Information**

Attire for the meeting is business casual. Wireless internet service will be available for everyone. For logistical questions and requests, contact Anjan Bose at 509-335-1147 or [bose@wsu.edu](mailto:bose@wsu.edu). If you have general questions about registration, contact Theresa Herr at 480-965-1643 or [Theresa.Herr@asu.edu](mailto:Theresa.Herr@asu.edu). For information about the meeting agenda or PSERC, please contact Dennis Ray, PSERC Executive Director, at 608-265-3808 or [djray@engr.wisc.edu](mailto:djray@engr.wisc.edu).