

2018

Entity: Smart Buildings, Loads and Customer Systems

Chair: Shawn Chandler

Vice-Chair: Ron Melton

Secretary: Johanna Mathieu

1. Significant Accomplishments:

- a. Committee General
 - i. Growth: benefits include developing the committee for sustainable development of standards through transparency, new technical community building and partnership across regions and nations, and resulting in additional IEEE service to humanity. The committee has added significant membership through our Asia Pacific Working Group and activities in Europe, with more than 75 members at large, and many active participants in two new PAR working groups with meetings hosted in the U.S. and China.
 - ii. Sponsor WG Policies and Procedures updated and completed
 - iii. New working group created for Energy Blockchain, an emerging area of interest for the energy community with significant activity across academia and industry. Benefits include drawing together the technical community with an additional resource for understanding the current topics of interest, industry progress and valuable collaboration that may be leveraged for future standard initiatives.
 - iv. A new website was developed and launched for the Committee found at <http://sites.ieee.org/pes-sblc/>
 - v. Marketing activities coordinated by PES showcased the Committee's activities in 2018
- b. Committee Task Force work on State of the Industry for Smart Buildings, Loads and Customer Systems Integration
 - i. A committee taskforce continues to develop a technical report on the state of the industry regarding methods and treatment of integration of customer systems with utility systems. Benefits include drawing together the technical community with an additional resource for understanding the current topics of interest, industry progress, and valuable integration points that may be leveraged for future standard initiatives.
- c. IEEE – P825: Meshing Smart Grid Interoperability Standards to Enable Transactive Energy Networks. The WG continues to sponsor and conduct outreach efforts, webinars, and conference presentations, and conduct activities for the PAR WG for development of the Guide. Benefits include developing a new standard for transactive energy, one of the

fastest growing areas of interest in the industry, technical community building in this space, and developing new partnerships across regions and nations.

- d. IEEE – P2781: Load Modeling and Simulation. This Entity method PAR effort was approved by PES SBLC Committee and IEEE SA in March, 2018. It seeks a Guide to align methods and techniques for developing load models, identifying load model parameters, and utilizing measurement data for load model development at various voltage levels. The initial year of effort sponsored three meetings in 2018 including a kick-off meeting on May 25, 2018 in Guangzhou, China, a 2nd meeting on Aug. 6, 2018 in Portland, USA at the General Meeting, and a 3rd meeting on Dec. 7, 2018 in Nanjing, China. 12 entities and over 50 experts have participated in this standard work. P2781 WG completed a first draft of the Guide during the 3rd meeting. Currently, WG members are reviewing the first draft for modifications and seeking additional collaboration.
- e. IEEE – P2783: Quick Response Systems. This Entity method PAR effort was approved by PES SBLC Committee and IEEE SA in October, 2018. It seeks a Guide to elaborate the definitions, classification and characteristics of rapid load response resources, such as active response loads, interruptible loads and energy storage, as well as function architecture, control strategy, and system implementation for quick response systems of customer-side loads. It is planned to provide complementary approaches for mitigating frequency stability issues of bulk power systems and microgrids, as well as absorbing renewable power. A kick-off meeting for the WG was held on Dec. 7, 2018 in Nanjing, China. 12 entities and more than 30 experts attended this meeting. P2783 WG members discussed the outline of the Guide and approved initial WG assignments. Currently, P2783 WG members are working on a draft according to their own assignments.

2. Benefits to Industry and PES Members from the Committee Work:

Technical materials are reviewed by SBLC to support industry meetings and conferences, and industry publications, benefitting the technical community in support of the evolution and development of in-scope technology, systems and processes.

- a. Committee officers or members reviewed papers, developed conference sessions, peer-reviewed papers and journal submissions, and GM conference poster sessions
 - 1. More than 75 papers reviewed for IEEE conferences
 - 2. More than 15 reviewed works in IEEE transactions
 - 3. More than 10 sessions for IEEE conference activities
- b. Committee officers or members engaged in more than 10 speaking opportunities and webinars throughout the year specific to advancing the scope of the committee and improving the technical community.

3. Benefits to Volunteer Participants from the Committee Work:

Volunteers involved in SBLC committee work have the ability to influence the standards and guides used in the industry in which they work, as well as improve their technical community and partnerships, and advance the state of the industry in regards to in-scope activities.

4. Recognition of Outstanding Performance:

Recognition of outstanding performance for Dr. Johanna Mathieu, in her highly successful tenure as TCPC of the Committee, and now as the new Secretary of the Committee.

Recognition of outstanding performance for Dr. Ron Melton, in his highly successful tenure as Vice-Chair of the Committee.

Recognition of outstanding performance for Paul Heitmann, in his highly successful tenure as Chair of the P825 Working Group on Transactive Energy.

Recognition of outstanding performance for Steve Widergren, in his highly successful tenure as Chair of the SBLC Architecture Subcommittee, and for advancing the interests of transactive energy, smart buildings, and system architecture within the industry.

Recognition of outstanding performance for Dr. Jizhong Zhu, Chair of the SBLC Asia Pacific Working Group, for continual advancement of the interests of the Committee abroad, and in his role as Chair of two PAR WG.

Recognition of outstanding performance for Shawn Chandler, outgoing Chair of the Committee, for his years of commitment to develop the Committee, establish SBLC within the IEEE community and drive partnerships to advance power systems technology in service to humanity.

5. Coordination with Other Entities (PES Committees, CIGRE, standards, etc.):

- a. Members of the committee participated in the work of IEEE standard IEEE2030 in 2018
- b. Members of the committee participated in the work of the PES Emerging Technology Coordinating Committee authoring sections of the 2018 PES Emerging Technology white paper
- c. Members of the committee participated in the work of IEEE 1547 development coordination and training with the Standards Association
- d. A Member of the committee served as a member of the steering committee and Track Chair for Smart Cities at the IEEE 4th World Forum on Internet of Things Conference held in Feb. 2018, and as a Track Chair for Smart Cities at the 5th World Forum on Internet of Things to be held in 2019.
- e. A Member of the committee serves as an Editor for the IEEE Internet of Things Magazine.

6. New Technologies of Interest to the Committee:

- a. Facilitation of transactive energy using blockchain technology
- b. Facilitation of distributed energy resource systems using narrowband technology behind the meter

7. Significant Plans for the Next Period:



- a. Continuation of effort for IEEE P825 – Meshing Smart Grid Interoperability Standards to Enable Transactive Energy Networks
- b. Continuation of effort for IEEE P2781 – Load Modeling and Simulation
- c. Continuation of effort for IEEE P2783 – Quick Response Systems
- d. Continuation of effort for Industry review of smart buildings, loads, customer systems stakeholders, community, and methods and techniques
- e. Expansion of subcommittee activities
- f. Expansion of working group activities within the SBLC Asia-Pacific Working Group

Submitted by: Shawn Chandler, Committee Chair

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