

P1409 CUSTOM POWER TASK FORCE

IEEE 15.06.05.01

Meeting Minutes

**IEEE PES 1998 Summer Meeting
San Diego, California
Tuesday, July 14, 1998**

**Sheraton Hotel
Exhibit Hall - A
1:00 to 3:00 PM**

The Custom Power Task Force met during the IEEE PES Summer 1998 Meeting in San Diego, California. Dan Sabin chaired the meeting.

The IEEE Standards System houses the homepage for the task force. It is located at <http://grouper.ieee.org/groups/1409/index.html>. Currently, the following information is available at the site:

- General information about P1409
- Archive of drafts of the P1409 Guide in Adobe Acrobat PDF format
- Announcements of meetings
- Latest version of the custom power technology development list
- Minutes and agendas from prior meetings in PDF format
- Presentation material from recent panel sessions

Introductions

Attendees introduced themselves, identifying their names and company affiliations. A total of 50 people signed the attendance list, a summary of which is attached. Members were asked to update their information on the attendance list, as well as update the status of any absent members they were aware of. The current membership lists includes 88 members, 16 correspondence members, and 99 guests. Stephen Middlekauff of Duke Power announced himself as the newly appointed task force secretary.

Minutes from Tampa

The last meeting of the task force was at the 1998 IEEE PES Winter Meeting in Tampa, Florida. Sabin prepared the minutes for review from the Tampa meeting, and Middlekauff presented and reviewed the minutes at the San Diego meeting. The discussion at the Tampa meeting focused on the status of the PAR approval for P1409. It was decided to

re-submit the PAR with a revised scope to meet the expectations of NesCom. The discussion also focused on the prospect of creating a special publication, primarily composed of material from recent panel sessions on custom power. There were two panel sessions at the winter meeting: *Application of Static Transfer Switches for Enhanced Power Quality*, and *Application of Static Voltage Conditioning Devices for Enhanced Power Quality*. Both sessions were extremely well attended. Those present at the San Diego meeting unanimously approved the minutes.

PAR Approval

It was announced that the Project Authorization Request (PAR) had finally been approved on June 24, 1998. This is the fourth iteration over three and a half years. It had been disapproved each time in the past for minor details. Previous reasons for rejection included a lack of a clear definition of power quality. For the last submittal, text was added referencing IEEE Stds. 1250-1995 and 1159-1995. Another reason has been a lack of a clear definition of custom power. Text was added to define custom power to pertain to voltages from 1 to 38kV, required to correlate with international standards. A copy of the PAR was handed out with the agenda.

There was a discussion of using the "trial use" qualifier for the PAR. The PAR was submitted with this qualifier, providing several advantages. There was some debate about the use of the trial use qualifier for the guide. The details for this qualifier are found on the web page: <http://standards.ieee.org/guides/par/guide98.txt>. Here is the relevant passage:

5c. Is this document intended for trial use or full use? A standard can be designated for trial use when a draft that has been generated satisfies the standards-developing group (i.e., subcommittee or working group), but needs input from a very broad constituency. This is a preferred alternative to the widespread distribution of unapproved drafts. Such a draft requires a letter ballot of the sponsor and approval by the Standards Board as a trial-use standard. Trial-use standards are effective for not more than two years from the date of publication. In the absence of comments received in the trial period, the document is subject to adoption as a full-use standard upon receipt of written recommendation from the sponsor and approval by the Standards Board.

Application Guide

The application guide had not been reviewed in several meetings, so the assigned chapter chairmen were identified and re-affirmed. The guide is available on the 1409 web page and is password protected. There was a request to have the password protection removed, but it was inconclusive as to whether this was possible. This resulted in an **action item** to see if it would be acceptable to remove the password protection. The chapter topics were reviewed to discuss if they were still appropriate, and it was decided no changes needed to be made to the chapter titles. Following are the chapter numbers and titles, and the status of each. This list with chairman and their contact information is available at <http://grouper.ieee.org/groups/1409/scope.html>.

1. Definitions: Neil Woodley (Westinghouse).
2. General Needs: Dan Sabin (Electrotek)
3. Input/Output Considerations: Stephen Middlekauff (Duke Power); Initial write-ups were done for series compensation devices and static transfer switches. More input is needed for shunt devices and active filters.
4. Configurations and Objectives: Neil Woodley
5. Performance Measurements: Previously Mark McGranaghan of Electrotek chaired this chapter, and he has handed it over to Jeff Smith of Electrotek for further development.
6. Case Studies: Ashok Sundaram (EPRI); Ashok is soliciting input for any relevant case studies.
7. Engineering Issues: Previously Paul Steciuk (PTI); Jim Burke (ABB) was asked if he wanted to coordinate this chapter. He said that he would help.
8. Bibliography: Vladi Basch (BG&E) is the chair for this chapter; he was not in attendance.
9. Economic Issues: Ram Mukherji (Enron) has agreed to coordinate input for this chapter and is soliciting any material.

The chairmen hope to have all the necessary material gathered by **October 1**. The first draft of the guide should be complete by **December 1**. Part of the next CPTF meeting will be devoted to reviewing the draft.

Special Publication

A special publication has been discussed in previous meetings that would introduce and define the emerging technology of custom power. The idea is that this would be fairly straightforward to put together using material from past panel sessions. There have been three panels sessions in the last three PES meetings: “*Application of Static Transfer Switches for Enhanced Power Quality*” and “*Application of Static Voltage Conditioning Devices for Enhanced Power Quality*” were each presented at the Winter '97 meeting. “*Application of Custom Power Devices for Enhanced Power Quality*” was presented at the Summer '98 meeting. A panel session on custom power was also presented at the '96 T&D show in Los Angeles. It was noted that most of the material from these panel sessions will be posted on the web page, and it was asked that all previous presenters from these panel sessions submit their presentation material electronically to Dan for posting.

Other material for contribution was discussed throughout the group. Neil Woodley suggested his paper on an overview of DVR topologies. It was suggested that some material be included on economic assessments of custom power, and it was noted that Stig Nilsson has previously published a paper on this. It was also concluded that it was acceptable to use material from other than IEEE sources for this special publication.

Critical needs for material for this publication include papers on transfer switches, static var compensators, and solid-state tap-changing transformers.

Another discussion involving the definition of custom power explored what the overall scope of the publication needed to be. It was mentioned that if the publication were to take the definition of custom power literally, then devices such as series capacitors, lightning arrestors, and UPS devices would need to be included. The consensus of the group was that these were technically proven devices and did not need to be covered in this publication, however it was decided to make a blanket statement at the beginning of the publication that would state that devices such as previously mentioned were viable power quality solutions, but would not be covered in this document.

The goal is to have the draft for this publication complete by the Winter 1999 meeting, and have the final draft ready by the T&D show in April 1999.

Custom Power Technology Development List

The custom power technology development list is available via the web page. Copies were distributed to the members at the meeting, and the group offered any additions or updates to the list. Several additions were suggested at the meeting, including a Salt River Project installation, a static-var-compensator installation by InverPower, several installations of ABB units, a PQ2000 installation, and two Siemens installations. The revised list will be posted on the web page, and Stephen Middlekauff will be responsible for additions and updates. Please contact him with any further list items.

Panel Session

There was a panel session at the summer '98 meeting, titled "*Application of Custom Power Devices for Enhanced Power Quality*" at 9:00am on Tuesday, July 14. Approximately 120 people attended the session illustrating the emphasis the attendees place on custom power and power quality. All presentation material will be available on the web page.

The panelists were:

1. "*Overview of Custom Power Applications.*" N. Hingorani, Hingorani Power Electronics
2. "*Field Experience with a Series Compensation Device.*" Stephen Middlekauff, Duke Power
3. "*A Static Transfer Switch Application to Enhance Power Quality at an Automobile Components Plant.*" J. Jipping, Detroit Edison
4. "*Field Demonstration of a Distribution System Static Compensation Device used to Mitigate Voltage Flicker.*" Harry Vollkommer, American Electric Power
5. "*Application of a Static Series Voltage Compensation Device for Sag Mitigation.*" Sasan Jalali, Siemens Power Transmission & Distribution LLC

Future Panel Session

Due to the continued strong support and attendance of the custom power panel sessions, it was recommended there be another panel session for the Winter 1998 PES meeting. It was requested that a presentation be made about economic assessments of custom power devices. Sabin and Middlekauff will be organizing this session.

P1409 Web Page

The P1409 Internet site has been receiving heavy traffic, and appears to be a successful way of disseminating information. The web page will continue to be the primary channel of information for the group. Members can contact the officers for material if they do not have access to the web site.

Action Items

Action Item Number	Task	Coordinator	Status
1	Determine policy of passwords on documents posted on web site	Sabin	In progress
2	Add web site feature to solicit comments on application guide	Sabin	In progress
3	Gather material for special publication	Sabin/ Middlekauff	In progress
4	Gather and compile material for application guide	Chapter Chairs	In progress
5	Organize panel session for Winter '99 meeting	Sabin/ Middlekauff	In progress

Next Meeting

The next meeting of the Custom Power Task Force will be at the IEEE PES Winter Meeting in New York City on Tuesday, February 2, 1999.

*Minutes submitted by Stephen Middlekauff, P1409 Secretary
August 17, 1998*

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Meeting Attendance List

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Name	Company
Bill Aaron	Tampa Electric Corporation
*Gregory Ardrey	Alliant Utilities - Wisconsin Power & Light
Lawrence Arendt	Manitoba HVDC Research Center
Daniel Brooks	Electrotek Concepts, Inc.
*James L. Burke	ABB Power T&D Company, Inc.
*Todd Campbell	GE
*Randy Collins	Clemson University
*Kevin Curtis	Virginia Power
*Fouad Dagher	New England Power Service Company
*Andy Dettloff	Detroit Edison
*Shashi Dewan	Inverpower
*Clay Doyle	El Paso Electric Co.
*David L. Duffy	Enron Energy Services
*Milan Graovac	University of Toronto
*Erich W. Gunther	Electrotek Concepts, Inc.
*Bob L. Hirt	ABB
*Bill Howe	E Source, Inc.
Reza Iravani	University of Toronto
*Jon Jipping	Detroit Edison
*Eric John	ABB
*John Kennedy	Georgia Power Company
Ljubomir Kojovic	Cooper Power Systems
*Mike Kotch	Tampa Electric Co.
W. O. Kramer	Silicon Power Corporation
*David Kreiss	Kreiss Johnson Technologies

Name	Company
*Frank Lambert	Georgia Tech - NEETRAC
*Jim Lemke	Cinergy
*Mark F. McGranaghan	Electrotek Concepts, Inc.
*Stephen Middlekauff	Duke Power Company
*Bill A. Moncrief	EPRI
*Larry Morgan	Duke Power
*Ram Mukherji	Enron Energy Services
Arun Narang	Ontario Hydro Technologies
John O'Neill	Commonwealth Edison
Paul Ortmann	Southern California Edison
*Greg Rauch	Dranetz-BMI
*Gregory F. Reed	Mitsubishi Electric Power Products, Inc.
*D. Daniel Sabin	Electrotek Concepts, Inc.
John Schwartzberg	Silicon Power Corporation
Ken Sedziol	Cinergy
*Ashok Sundaram	EPRI
Rao Thallam	Salt River Project
Betty Tobin	Seattle City & Light
*Marek Waclawiak	United Illuminating Company
Van Wagner	Square D
*Cheri Warren	Power Technologies, Inc.
*Michael Weinold	Siemens AG
*James Wikston	Hatch Associates Ltd.
*Neil H. Woodley	Westinghouse Electric Corporation
Don Yuen	Puget Sound Energy

* Denotes task force member

Total in Attendance: 50