

**IEEE Standard 1159**  
**Recommended Practice on Monitoring**  
**Electric Power Quality**

**Meeting Minutes**

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The meeting opened at 10:18 a.m. on January 16, 2006 in the Mesquite 2 Room of the Westin Causaurina Hotel in Las Vegas, NV. The meeting was held as part of the 2006 Technical Committee Meeting for the Transmission and Distribution Society.

The meeting was opened by Randy Collins – Chairman of the committee.

A list of membership and interested parties was passed around to take a roll-call of those present. Eleven (11) persons signed in as Members; and one (1) person signed in as interested parties.

The outline of the planned meeting was reviewed by the chair prior to the meeting starting. A moment was spent recalling the efforts of the recently deceased Dave Vannoy, the previous vice-chair of the 1159 committee. Dave was in Denver promoting power quality information and coordination for the committee. A sympathy card for his family was passed around

The minutes from the previous meeting were reviewed. It was noted that the meeting was attended by some standards personnel, and standards policy will be a topic for this meeting as well. Motion by Rich Bingham, second by Dennis Hansen to approve minutes with minor changes, all approved.

PAR status was reviewed. 1159 does not presently have an open PAR, and in March, 2006, it is expected that the new PAR will be approved. Then the document can be sent to editorial for update and then to balloting. PAR has been resubmitted to NESCOM. The comments from the NESCOM review were presented and discussed. The first question was regarding the difference between the original PAR in 1995 to the present. The new PAR language was updated, but only to make the language more succinct. The next question was regarding the scope difference from the original PAR. The question related to a voltage threshold of 1000 VAC. The chair responded that the standard is not limited to only voltage above or below 1000 VAC. A third question regarding the purpose of the standard. The chair responded that the purpose and scope statements of the PAR would match those stated in the document. Other questions dealt with various formatting and text placement.

A copy of the present draft of the 1159 standard was passed out to the attendees. In addition, a copy of the definitions contained in the standard was distributed. The chair noted that definitions were required to be used from the most recent version of IEEE Std 100 – (presently 7<sup>th</sup> Edition) – Definitions. The standard formatting document has macros and so forth to cause the standard to look like other standards. It was noted that

the standard falls under the Transmission and Distribution committee. The committee sponsoring the standard is to be placed in the document per the template.

A review of the overall structure of the document was shown. The difference between chapter and “clause” was mentioned – the document is divided into Clauses. “Normative Reference” was discussed. The normative references are ‘indispensable’ to the reading of the standard being developed. Presently, the standard refers to a couple of IEC documents and IEEE standards 100 and 1100. It then mentions where they can be acquired – this text must be moved somewhere else in the document. All items except IEEE Standard 100 will be shifted from Normative References to the basic References section. Other standard development has had the source of the documents (addresses for IEEE and IEC) removed from the standard altogether.

It was noted that the committee needed to establish a connection to someone from IEEE Standard 100 to provide additional coordination and information.

The definitions section is to only contain NEW definitions. If the definitions exist in IEEE Standard 100 they cannot be placed in definitions in the new standard being developed. If the definition in Standard 100 does not match the new use, it CAN be placed in definitions in the new standard. However, the new definition will be scrutinized by the Standard 100 committee to ensure that no new definitions are repeated or just slightly altered. However, in 1159, Clause 4 serves to provide extra descriptions of the definitions. So what this means is that the definitions section will only have a few entries, and Clause 4 will have many descriptions of the phenomena. The glossary, however, can repeat standard 100 definitions, but must repeat them word for word, for convenience. So, if standard 1159 creates a new definition in the Definitions section, it will cause delay, as Standard 100 reviews and approves the new definitions.

A present copy of IEEE Standard 100 was not available to the committee to do a detailed review of those definitions compared to the ones in the 1159 document. The chair had an older copy (1984) and provided some insight into the differences from the present 1159 definition and the Std 100 version of the same definition. Much discussion was held regarding how to integrate the Standard 100 requirements into the new standard development. The chair thought that he could have a graduate student compare the document’s definitions to those found in Standard 100 and provide a summary.

Clause 4 has several instances of the word “defined” and “definitions” that need to be changed to avoid the sensitivity of the definitions issue. Potentially change the words to described and description. For every line item in the phenomena table, we need to have a definition in either the Definition section or the Glossary. Otherwise the table has no credibility. Rich Bingham indicated that being clear about the terms “low frequency”, “medium frequency” and “high frequency” was misused by some manufacturers of equipment. Some casual use of the terms related to low-medium-high frequency are being used in areas other than oscillatory transients. However, 1159 only uses these terms in the oscillatory category. The low-medium-high frequency terminology should be added to the areas under voltage fluctuation and noise to help clarify the situation.

A question regarding unbalance and imbalance was brought up by Mike Lowenstein. The chair noted that the committee decided to remove imbalance and use the term unbalance instead. It was noted that during the IEEE review, coordination with other standards would be required, including ANSI standards.

All table and figure captions must be sequential in the document. This means that references like “Figure 4-2” are no longer allowed. Tables are number independent of figures. The section headings must also follow the #.#.#.# type of heading labeling. The chair asked each chapter chair to review the section heading application to make sure it was done correctly. Page 23, line 26 was noted to have some numbering issues of not incrementing correctly. Also, page 24 has similar issues.

Safety issues were discussed. IEEE can be sensitive to having safety recommendations in the standard. Some work should be done to clear up the safety sections in Clause 6 and Clause 7. It was mentioned that we possibly could change the statement to say only “qualified personnel.”

Page 32, the standard 1453 includes the word “proposed.” The reference needs to be updated. Also, references to 519 need to be examined, and potentially, 519.1 needs to be references as well. It was noted that Standard 519 is still in development for an update. The 1992 version is still the latest version.

Annex B was decided to be left in the document. The Glossary would go at the end, after Annex C. The Glossary would be an informative section of the document, not normative. It is just a repeat for convenience.

Some discussion was held regarding the definitions task that was needed of the Chair’s graduate student. He would have the student divide into “terms we are defining that are the same as Standard 100, terms that are not the same, and definitions that do not exist. Then the chair will send that list out to the group for opinion. Those definitions that match will go in the glossary, those that are not in Standard 100, will need to go in definitions, and those that exist in both places, but do not match would need to be edited to see if we can get them to match or if a new def is needed. The chair will work to consolidate to one list of definitions that would need to be added to Standard 100.

Page 64, line 45 has an error in the harmonic description regarding the k.

The chair indicated that the references section needs substantial amount of work. The section we have now is essentially the one from the original Standard 1159 release. The chair is tasking each chapter chair to get the references sorted out. He is asking each chapter chair to include their chapter number in the references list for clarity for him (ie. 4-1, 4-2, etc). The chair is also asking if we can include a list of other documents that would be good reading to help inform the reader. They may not have references, but would add to the subject. This might provide some history and background for the subject.

The schedule of the standard activity was reviewed. Each chapter chair should have input to the chair by March 31, 2006. The final edited document should be completed by April 30, 2006. Definitions finalized by February 15, 2006 to send to SCC 10 for coordination. Desired to ballot by end of 2006.

It was noted to be careful regarding references to non-IEEE material. If the reference is quoted, a copy write release would be required. Rich Bingham indicated that the current writing of 1159 was written to the North American market for information, rather than the European standard for compliance. The chair indicated that it was an idea to add this aspect to cover someone using the standard for compliance rather than information. The desire would be to add this structure in just a few paragraphs, rather than change the entire document to reflect this viewpoint. It was agreed that Rich Bingham would draft such a paragraph set and send to the chair.

The meeting was adjourned at 11:59 a.m.

Attendees included 20 attendees, of which, 3 were visitors, and 17 were members.

Post Note: Michael Z. Lowenstein requested that his name be listed at "Michael Z. Lowenstein" in the document.

Submitted: Tim Unruh