Proposed IEEE Std. P1159.1
Task Force on a Guide for Recorder Qualification and Data Acquisition Requirements for Characterization of PQ Events

Meeting Minutes

Meeting Date: 3 February 1998
Location: Tampa, FL
Purpose: Develop format and content expectations for TF Guide Book
Attendees: Roger Bergeron, Dave Mueller, Dan Sabin, Alex McEachern, Erich Gunther, Greg Rauch, Andy Detloff, Larry Ray, Richard Bingham, Scott Peele, Peter Shah, Jim Loorya, Mike Teachman, Donald Ruthman, James Wikston, Richard Brown, Randy Collins, Arshad Mansoor, Larry Morgan, Gil Hensley, Phil Parker
Author: Daniel Brooks

The meeting was called to order by chairman Roger Bergeron.

Reviewed the minutes of the meeting of 10/23/97. Those minutes were approved, with the general comment that "There was no intention to define "high" class instruments or "low" class instruments, but rather to define the purpose or category of instruments."

Welcome

Roger Bergeron welcomed everyone to the meeting and distributed several documents which are attached. These documents include example formats and language which Roger feels are useful in compiling the TF guide book.

Agenda

Daniel Brooks distributed the agenda developed by Roger (which is also attached). One item was added to the agenda; Electronic File Transfer Format Discussion. With this addition, the agenda was approved.

Discussion of Scope

Roger Bergeron suggested that the objective of the meeting was to discuss whether there was agreement on the structure of the guide. Alex MacEachern suggested that the guide should not define the exact methodology of the instruments.

Domain Chair Reports

Transients – Rich Bingham

Additional material has been submitted after Rich's original "tutorial discussion" was put forward. Rich had not had time to review this additional material prior to the meeting.

Short-Duration RMS Variations

No report

Long-Duration RMS Variations

No report.

Power Frequency Variations – Greg Rauch

Greg was requesting reaction to his draft, which was prepared strictly for discussion. He suggested that there were many possible techniques, and he avoided recommending any one specific technique. It was proposed that there could be a standard test for certification.

Voltage Imbalance

No report.

Waveform Distortion – Erich Gunther reporting for Jeff Lamoree

The draft is in progress, a table showing the effects and issues with long term data was being prepare. Also, a test using two months of data from monitored data would show the effect of various sampling rates on the accuracy of the data. Erich was also going to coordinate this work with the CC02 working group in Europe.

Voltage Fluctuations

No report.

General Comments

After reviewing the sections, Roger Bergeron reviewed the overall scope of other aspects of the document:

1. What is the application for the measurement device? Ultimately this defines the requirements for sampling frequency, etc.
2. The concept of "application classes" such as troubleshooting, contracts, or equipment immunity as examples of classes.
3. What are the requirements for currents or other inputs? Transducers and frequency response issues are especially important for transient measurements.
4. Bibliography
5. Annexs

Discussion of Imbalance During Voltage Sags

Larry Morgan suggested that sections 5.6, 5.7, and 5.8 should include a imbalance definition for voltage sags. Erich Gunther commented that unbalance has a definition for steady-state phenomena. A discussion ensued regarding the use of the words "imbalance" vs. "unbalance". A suggestion that the characterization of voltage sags should be left for P1159.2 was given. Roger Bergeron suggested that this type of information could be put in an appendix, or perhaps a reference to P1159.2 would suffice. Philip Barker, in concert with his PQ Definitions working group was asked to review the use of the word "imbalance" in the existing 1159 standard.

Discussion of Transients

Roger Bergeron began a discussion of Transients with a figure labeled "Table 5.1". It suggested two major categories of transients: "impulsive" and "oscillatory". Some events might have both characteristics, but it was reported that the IEC defines a transient as "impulsive" when 77% of its magnitude is in one polarity. Then a discussion followed on the "Attributes of Transients". Roger Bergeron suggested that some application classes will not require all frequencies. That real world networks include varisters and other surge protection devices that would possibly limit the range of disturbances less than 6kV. Rich Bingham suggested that it was difficult to define these limitations, because real world conditions vary. He suggested the term "typical" rather than "required". Alex MacEachern and Philip Barker agreed since there were special circumstances such as the power systems in ships and other special uses. Finally, Arshad Monsoor had the usefull suggestion that the group use ANSI/IEEE C62.41 Class types to define such characteristics. This suggestion was motioned and seconded by Erich Gunther.

It was suggested that the connections shown on page 16 should include other connections such as split-phase.

Discussion of Instrumentation Classes

The discussion came back to that of "measuring classes". The description of a "troubleshooting" class was followed by a criticism of the need to define "what am I troubleshooting." A "benchmarking" class that describes the quality of a public-supply network might exclude high frequency measurements -- but may have need for a characterization of switching transients. The "troubleshooting" class probably requires continuous monitoring, the "benchmarking" class probably only requires some statistical sampling (for example -- to show a 95% probability level) . A discussion of a possible "revenue" class of meter was also discussed. The summary of classes revolved along the following proposed: "characterization of 1159 events", "revenue accuracy", "legal/contract issues", "system benchmarking", and "troubleshooting".

Alex MacEachern objected that the group was trying to define "how to make the measurements", when the group should really define some characteristics that ensure consistency. He said "We need a one-pound test wave, rather than describing what type of scale is needed".

Mission Statement

Finally, the discussions led to the following statement: "The approach of this group is aimed to provide methods for the user to get defensible PQ measurements. It will include guidelines based upon use or application. It describes accuracy classes associated with 1159 categories, governed by factors such as amplitude, frequency, window width, sampling rate, etc." A vote was taken whereby this statement was approved as the main purpose of the group. It was suggested that each domain chairman develop their own matrix describing accuracy classes for their phenomena.

Web Site

It was decided that a web site for information should be developed for the Group -- P1159.1 and for Password -- P1159.1PW.

Next Meeting

The next meeting is in San Diego during the summer meeting July 12-16, 1998.