

4.2 Chapter 3 - Tom Key - General Needs Guidelines

Tom was not present at the meeting. The latest draft of this chapter is included as an attachment to the meeting minutes.

4.3 Chapter 4 - Ray Waggoner - Fundamentals

Ray was not present at the meeting. The last draft that was distributed did not include figures or graphics. It has been requested that the figures and graphics be added to the next draft. The inclusion of the figures and graphics will help in the review process.

4.4 Chapter 5 - Doug Dorr - Instrumentation

Doug reported that the chapter had been completed. All text in the previous draft that appeared in a small font size, has been deleted. All text that appeared bold-faced, was added as new text. Doug has contacted all manufacturers for updated photographs for inclusion in the new edition.

AEMC, a manufacturer of test equipment, takes exception with the statement in section 5.4.4 of Chapter 5. AEMC claims that their instrument can accurately measure the ground resistance. The statement is listed below.

Ground resistance tests should be conducted with a fall-of-potential method instrument. Clamp-on instruments that do not require the grounding electrode to be isolated from the building grounding system for the test are of questionable validity for industrial and commercial buildings (IEEE Std 81-1983 [B6]). In practice, the resistance of the earth grounding electrode is tested when the building is inspected, following its construction, but at no other time.

Discussions followed concerning the use of the AEMC device. It was the general consensus of the working group that the results could be unpredictable if the device was used outside of its specified environment. Ken Michaels and Doug Dorr have agreed to address this concern. Section 5.4.4 will be re-worded to make the reader aware of these conditions.

4.5 Chapter 6 - Ken Michaels - Site Surveys and Power Analysis

Ken reported that Chapter 6 is complete. Comments received over the past few weeks have not been incorporated.

Wendell Carter expressed concerns over the wording and methodologies in several sections of Chapter 6.

1. The wiring integrity audit may release the need for monitoring. Wendell would like to include monitoring as a verification of this issue. Wendell will write up a response to be included in this section.
2. Fused clip leads are discussed in section 6.4.22. Wendell expressed concern over the safety and usability of these types of leads. Ken addressed his concern and provided information that the newer type of leads incorporated a better clip technology which does not allow for a loose connection.
3. In section 6.2.4, Setting Monitor Thresholds, Wendell had concern for the methodology used when setting thresholds. Wendell will write up his approach and submit it to Ken.
4. Wendell would like to see EMF/EMI concerns addressed in this chapter. Wendell will write a section on measuring EMF/EMI and submit it to Ken for inclusion in Chapter 6.

4.6 Chapter 7 - Don Zipse - Case Histories

Don reported that he has received comments from several reviewers. Chapter 7 is in good shape and there will be no problem meeting the deadline of October 1996.

Don mentioned several of the new case studies that he has added, in particular, a case study on stray voltages on water pipes. Don also made a request for new case studies that have not been previously addressed in the chapter.

Several questions were raised by members on specific case studies. These included discussions on neutral/ground connections raised by Chip Stansbury. Don and Elliot Rappaport satisfied Chip's concerns.

4.7 Chapter 8 - Vladi Basch - Specification and Site Selection of Equipment and Materials

Vladi was not present at the meeting. Tom Gruzs reported that there were no changes to the chapter and that utility side solutions would be added to the end of the chapter.

4.8 Chapter 9 - Mike Butkiewicz - Recommended Design and Installation Practices

Mike reported that the chapter was not finished. Since the last draft was distributed, Mike has received conflicting comments from different members of the working group. As an action item for the next meeting, Mike will compile a list of the conflicting comments for discussion.

Discussion was held concerning several terms used in Chapter 9. The terms are listed below:

- Computer Room
- Data Processing Room

- Information Technology Equipment Room

Mike will coordinate with Carl on putting terms in Chapter 2 and will standardize on using one term throughout his chapter.

Discussions were held concerning the sizing of the “ground conductor.” Should the ground conductor be:

1. sized to code minimum
2. sized to phase conductor

Al Warner cited the NEC 250-95 as specifying a minimum size conductor that must handle any current imposed on it.

Elliot Rappaport stated that the NEC doesn't specify a minimum size for the supplemental grounding conductor. The NEC is a minimum safety requirement.

Ed Cantwell would like to see “Our” recommendations in the chapter. NEC is not a design guide. Ed suggested the following:

1. The supplemental ground conductor should be an insulated ground wire and not the conduit.
2. The supplemental ground conductor should be no larger than the required size for the safety conductor, and one must consider the voltage drop and fault current requirements.

Bill Bush would like to see the term “signal reference grid” removed from the book and replaced with “ground reference grid.” Bill's argument is that the term “signal reference grid” refers to signal purposes only. Tom Gruz added that the term “ground reference grid” had a safety connotation. Nothing decided at meeting.

Also discussed during the review on Chapter 9 was the discrepancies between the Green Book and the Emerald Book in reference to multi-point and single-point grounding. Mike was given the task of coordinating the terminology and philosophies of these issues with the Green Book. Mike is soliciting help on this section 9.5.3.3.5.

Mike is also soliciting help for developing and obtaining drawings and photographs for Chapter 9. Please contact Mike directly if you have any graphics that may be useful for Chapter 9.

4.9 Chapter 10 - Bill Bush - Distributed Computing and Telecommunications Systems

Bill Bush was not present at the meeting but he did submit a letter to Tom Gruz containing comments and concerns regarding Chapter 10. I have attached the letter submitted by Bill.

Warren Lewis submitted comments on Chapter 10 to Tom Gruz. This letter, along with Tom's response, have been attached to the meeting minutes.

5.0 Working Group Milestones

Although there was not sufficient time to cover all topics on the agenda, including the Working Group Milestones, Tom Gruz has submitted the following for the review of the working group chapter chairmen and members.

5.1 Chapter 1

Chapter 1 is complete, ready for ballot pending completion of the other chapters.

5.2 Chapter 2

Chapter 2 needs draft for working group review as soon as possible, no later than mid-July so we can distribute for comments and revision prior to our October meeting. All chapter chairmen should forward any new definitions to Carl Becker as soon as possible for inclusion in the first draft. Need to coordinate definitions with recently published IEEE power quality standards, including 1159, 519, etc.

5.3 Chapter 3

Chapter 3 needs draft for working group review as soon as possible but no later than mid-July so we can distribute for comments and revision prior to our October meeting.

5.4 Chapter 4

Chapter 4 needs completed and updated draft for working group review as soon as possible, no later than mid-July so we can distribute for comments and revision prior to our October meeting.

5.5 Chapter 5

Compile and incorporate Chapter 5 comments received from the working group into the next draft. Complete revisions by October meeting and bring copies for distribution to working group.

5.6 Chapter 6

Compile and incorporate Chapter 6 comments received from the working group into the next draft. Complete revisions by October meeting and bring copies for distribution to working group.

5.7 Chapter 7

Compile and incorporate Chapter 7 comments received from the working group into the next draft. Complete revisions by October meeting and bring copies for distribution to working group.

5.8 Chapter 8

Compile and incorporate Chapter 8 comments received from the working group into the next draft. Complete revisions by October meeting and bring copies for distribution to working group.

5.9 Chapter 9

Compile and incorporate Chapter 9 comments received from the working group into the next draft. Complete revisions by October meeting and bring copies for distribution to working group.

5.10 Chapter 10

Chapter 10 prepare next revision of draft incorporating working group comments before TIEE meeting for coordination and develop next version of draft for working group review as soon as possible. Please distribute for working group comments and another revision prior to our October meeting.

6.0 New Business

6.1 Call for Papers

A solicitation for technical papers for the 1997 IEEE IAS I&CPS conference was made. No respondents at this time. If you would like to submit a paper for this conference, please contact Tom Gruz.

6.2 Coordination/Liaison Updates

The P1100 Working Group still needs updated contacts for the P1159 working group

6.3 Balloting Issues

Discussions were held concerning the issues of the balloting committee and the classification of individuals on the balloting committee. There are three major classifications of members on the balloting committee.

1. **U** - Users. It is recommended that the committee contain less than 50 % users.
2. **GI** - General interest. It is recommended that the committee be 50 % or more of this category.

3. **P - Producers.** It is recommended that the committee contain less than 50 % producers.

The classification of the members of the balloting committee is left up to the member. The classification is to be determined as your particular interest. This interest is as it pertains to the working group.

A balloting committee advertisement has been attached to these minutes. Please respond to the advertisement. Please remember that a return of 75 % of ballots is required from the balloting committee in order to satisfy IEEE by-laws. If you do not plan to participate in the balloting process, please **do not** sign up for the committee.

6.4 Metrics

All chapter chairmen are reminded that we are currently in stage one of the metric crossover for the IEEE. This crossover is a three stage process.

Stage 1:

After January 1, 1996 include metric unit equivalents.

Stage 2:

After January 1, 1998 give metric the preferred place with optional English unit equivalents.

Stage 3:

After January 1, 2000 give metric units only with limited exceptions for English unit equivalents.

6.5 IEEE Copyright Notice

A reminder was given to all chapter chairmen to add the correct IEEE copyright notices on each page (as footer). Be sure to include all drawings, photos, illustrations with the next draft. Tom Gruz requests that all line art also be submitted in an electronic format. Please see the meeting minutes for the 1995 IEEE IAS Annual Technical Conference P1100 Working Group Meeting for the proper text and format of the copyright notice (section 3.1).

7.0 Chapter Roster Updates

Chapter chairmen are requested to provide updated chapter rosters of active participants to Tom Gruz for inclusion in the listing of the next edition of the Emerald Book.

Chapter chairmen are requested to have the next drafts to reviewers by August 1, 1996.

8.0 Next Meeting

The next meeting of the IEEE IAS P1100 Working Group (Emerald Book) will be during the 1996 IEEE IAS Annual Technical conference. This conference will be held during the week of October 7, 1996, in San Diego, CA. The exact date, time, and place will be distributed to working group members when they have been finalized.

9.0 Meeting Adjournment

A motion was made and seconded to adjourn the meeting. The motion passed unanimously.