



TC-5: High Power Electromagnetics



**Annual Meeting at the
2009 IEEE International Symposium on EMC at Austin, Texas
Wednesday, August 19, 2009**

Confirmed on July 28, 2010

1. Opening of the Meeting. Chairman Dr. William (Bill) Radasky brought the meeting to order at 12:06 pm. Chairman Radasky reviewed the agenda and asked for suggested changes; none were offered. The following items were discussed.
2. Minutes. Secretary Price reviewed the minutes of the 2008 meeting. There were no corrections or comments. Chairman Radasky offered a motion that the minutes be approved as read. MSC.
3. TC-5 Membership List. All members present introduced themselves. Secretary Price circulated a roster (the list of attendees is attached).
4. Technical Papers. Dr. Radasky reported that for this EMC symposium 12 papers were submitted for the regular TC-5 session, and 3 were rejected. Of the 9 remaining papers, 5 were posters and 4 oral presentations. Of the 4 oral papers, one addressed lightning, one ESD, one IEMI, and one HEMP coupling; the latter was a no show. Of the 5 accepted poster papers, one was not in the final program, but the reason is not known. It is presumed that the author did not register for the conference. It is noted that the TC-5 oral papers were combined with the TC-7 oral papers, as their topics were similar to ours.
5. Report on Tutorial. Frank Sabath, who is the Chairman of TC-7 (and was unable to attend this conference), organized both a tutorial and a special session on protection against short-pulse, high-power, IEMI threats. It was decided by the TAC to make the tutorial and the special session joint sessions with TC-5 since they both dealt with the scope of our committee. The tutorial on Monday was well attended with about 60 people. The special session is tomorrow afternoon with an interesting set of papers.
6. Tutorial on MIL-STD-461/464. About 80 people attended the MIL-STD-461 tutorial and 65 the MIL-STD-464 tutorial on Monday. The tutorials featured Manny Rodriguez, the secretary for MIL-STD-464, Robert Boseworth from Dahlgren, and Kurt Sebacher from NAVAIR.
7. Report from Lightning Subcommittee. Prof. Rachidi reported on the lightning subcommittee activities since the last TC-5 meeting. A special issue of the IEEE Transactions on EMC dealing with lightning will be issued later this month. The last special issue on the topic was 11 years ago and much has changed since. There will be 13



original contributions plus a paper by the guest editors: 3 on lightning discharge observations, 3 on theory, 2 on locating lightning, one on LEMP, 3 on lightning-induced effects, and one on protection. Prof. Rachidi summarized related activities within CIGRE and other international groups (see agenda item 12 for more details). He also summarized the upcoming conferences in which lightning papers will be presented.

8. Status of the IEMI Standard Practice Activities. P1642 Recommended Practice for Protecting Public Accessible Computer Systems from IEMI: Dr. Radasky chaired a productive meeting of this working group on Tuesday. The current draft was reviewed, and after considerable discussion a new schedule to complete the work was developed. It is planned that by November there will be an update with new material, and a new draft will be issued by January 2010. By the next EMC meeting, a final draft should be completed.
9. Web Page. The Vice Chairman is not present due to “EMC emergency.” Mike McInerney has been working on the web page.
10. HPEM and IEMI Activities. The following activities were reported by Dr. Radasky.
 - a. Jan. 2009, Zurich. Chairman Radasky and Dr. Richard Hoad offered an IEMI tutorial during the Zurich Symposium;
 - b. May 2009, Boston. Chairman Radasky presented a paper during the IEEE Homeland Security Conference;
 - c. June 2009, Beijing. Chairman Radasky chaired an IEC 77C workshop;
 - d. June 2009, Kushiro, Japan. CIGRE activity on IEMI has started;
 - e. July 2009, Kyoto, Japan. Special session on IEMI during the EMC Symposium;
 - f. July 21, Washington, D.C. The House subcommittee on Homeland Security held a hearing on effects of EMP, IEMI, solar storms, etc., for which Dr. Radasky provided a written testimony;
 - g. Sept. 2009 (future), Niagara Falls. There will be a special symposium on HEMP with commercial sponsorship;
 - h. Sept. 2009 (future), Switzerland. HPM workshop organized by Dr. Baum;
 - i. April 2010 (future), Beijing. Asia Pacific EMC conference, with a special session on High Power EM;



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- j. July 2010 (future), Ottawa. AMEREM special session on IEMI.
11. Future IEEE International EMC Symposium Special Sessions and Tutorials.
- a. Kurt Sebacher suggested a one half-day tutorial on MIL-STD-461 and -464 due to the significant attendance this year;
 - b. Fred Heather proposed a workshop on incorporating the lightning near-strike threat and ESD personnel handling threat into MIL-STD-461;
 - c. Chairman Radasky mentioned the topic of INFOSEC for commercial applications, and said there has been much work in the ITU on this.
12. New Activities for TC-5. Prof. Rachidi presented the following:
- i. New WG CIGRE C4.407 “Lightning Current Parameters for Engineering Application.”
 - ii. WG CIGRE-CIRED JWG:C4.402 JWG on Lightning Protection of MV and LV lines.
 - iii. New WG C4.408 “Lightning Protection of LV Lines”, chair Alexandre Piantini.
 - iv. New WG C4.409 “Lightning Protection of Wind Turbine Blades”, chair Shigeru Yokoyama.
 - v. European COST Action P18 “The Physics of Lightning Flash and Its Effects”, chair Rajeev Thottappillil (www.costp18-lightning.org).
 - vi. International Project on EM Radiation from Lightning to Tall Structures, chair Wasył Janischewskyj (<http://emcwww.epfl.ch/iplt>).
 - vii. Upcoming events: Asia Pacific EMC in April 2010; 10th Intl. Symp. On Lightning Protection SIPDA in Nov. 2009; AMEREM in July 2010; 30th Intl. Conf. on Lightning Protection, Sep. 2010.
13. Other Business.
- a. There was some discussion on the lightning near-field environment for wind turbines and how to protect the turbine electronics from this threat. There currently is no standard addressing the issue.
 - b. Chairman Radasky asked Perry Wilson about future special issues of Trans. on EMC. Dr. Wilson answered that we are due a special issue on EMP. Dr. Radasky will open discussions on this topic with the editor.
 - c. Chairman Radasky asked members to suggest links for the TC’s web page.
14. The meeting was adjourned at 1:47 PM.



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Respectfully submitted,

William Price
Secretary



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Attendees at TC-5 Meeting on 19 August 2009

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