

# Workshop on High Power Electromagnetic (HPEM) Threats – High Altitude Electromagnetic Pulse (HEMP) and Intentional Electromagnetic Interference (IEMI)

17-18 November 2010  
Houston, TX

(Visit [www.narte.org](http://www.narte.org) for more information)

This is the third workshop covering new developments in two important high power electromagnetic (HPEM) threats – High-altitude electromagnetic pulse (HEMP) and Intentional Electromagnetic Interference (IEMI). In 1989 the International Electrotechnical Commission (IEC), in particular its technical committee 77 and its subcommittee SC77C headquartered in Geneva, began to develop HEMP standards, and as of August 2009, twenty publications covering the threats of HEMP and IEMI, their impacts on commercial electronic equipment and systems, and protective methods have been published. In 2004 and 2008 the US Congressional EMP Commission published two

important documents dealing with the threat of HEMP on the United States with emphasis on the critical infrastructures. These two publications have clearly indicated the level of threat of such high power electromagnetic fields to society in general and to specific infrastructures such as power and communications.

In addition to the work performed by the IEC and the EMP Commission, three other organizations have become active in writing standards to protect equipment and systems against these threats. First the IEEE EMC Society is working on a recommended practice for protecting public accessible computers from IEMI. The ITU-T has recently completed work on two recommendations to protect telecommunications centers from HEMP and IEMI. Finally Cigré (International Council on Large Electric Systems) has recently begun work to write a report on how to protect high-voltage substation electronics from the threat of IEMI.

This workshop will review the standardization work of the IEC, the IEEE, the ITU-T and Cigré. In addition, the major features and conclusions of the EMP Commission will be reviewed.

***In the HPEM Threats workshop, you will learn:***

- Overview of the IEC HEMP Publications
  - The effects caused by HEMP
  - The radiated and conducted HEMP environment
  - The classification of the HEMP environments
  - HEMP test approaches
  - HEMP test facilities worldwide
  - HEMP protection approaches
  - HEMP immunity test standard
  - HEMP generic standard
- Overview of the IEC IEMI Publications
  - The effects caused by IEMI
  - The radiated IEMI environment
  - The conducted IEMI environment
- Measurement methods for IEMI
  - HPEM/IEMI test facilities worldwide
  - Review EMP Commission Reports

- Review of HEMP and IEMI standardization work in other organizations

***Who Should Attend***

Those responsible for protecting systems from HPEM:

- Product Managers and Developers
- Critical Facility Developers
- EMC Engineers and test technicians
- Test Instrumentation Developers
- Test instrumentation and chamber manufacturers

***Suggested Hotel***

Nassau Bay Hilton  
3000 NASA Road 1, Houston  
Tel: 281-333-9300 or 800-634-4320  
Reservations are responsibility of attendee.  
Rate of \$118 available under iNARTE name,  
or at  
[http://www.hilton.com/en/hi/groups/personalized/HOUBNHF-INA-20101116/index.jhtml?WT.mc\\_id=POG](http://www.hilton.com/en/hi/groups/personalized/HOUBNHF-INA-20101116/index.jhtml?WT.mc_id=POG)

**Expert Instructor**

Workshop features as lead instructor, Dr. William Radasky, IEEE Fellow, EMP Fellow, Chairman of IEC SC 77C, and President of Metatech Corporation.

**Workshop location**

Johnson Space Center  
Gilruth Center, Coronada Room  
Parking available

**Fee Includes:**

Lecture notebook, lunch, breaks, and completion certificate.

**Agenda**

17 Nov: Registration: 8:30 am  
Class: 9:00 am to 5:00 pm  
18 Nov: Class: 9:00 am to 5:00 pm

**Registration Form**

**Contact: iNARTE**

**Telephone:** 1-800-89-NARTE [lawrence@inarte.us](mailto:lawrence@inarte.us)  
**for mailing instructions**

Ms./Mr. \_\_\_\_\_  
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Daytime Phone \_\_\_\_\_ Fax \_\_\_\_\_  
Email \_\_\_\_\_  
Credit Card (check one): MC \_\_\_\_\_ Visa \_\_\_\_\_ Amex \_\_\_\_\_  
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Expiration Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

**Check or Credit Card Number must accompany registration.**

Alternatively, secure registration can be made on  
<http://www.narte.org/h/hemp.asp>

**HPEM/HEMP/IEMI workshop**

By 1 Nov. 2010*:	\$ 900 USD _____
Add \$200 after 1 Nov. or at the door	\$ 200 USD _____
Add 1 copy of workshop notebook**	\$ 100 USD each _____
IEEE EMCS or iNARTE member credit (Member number _____)	-\$50 USD _____
	Total USD \$ _____

If a check is used for payment, make it payable to iNARTE in US dollars (drawn on a US bank) and mailed to the address on the iNARTE web site.

\* Please do not mail after 1 November 2010.

\*\* Order by 1 November 2010 for pickup at the workshop.

***NOTE: You are not registered until you receive confirmation***

The organizing committee reserves the right to substitute speakers, modify the program (or lecture notes), restrict attendance or to cancel the workshop. In the event the workshop is canceled, registration fees will be refunded (credit cards are only processed if workshop is held). No refunds will be made to individuals who cancel after 1 November 2010. Substitutions are allowed. ***Without a minimum of 15 attendees signed up by 5 November 2010 the workshop will be cancelled and registration fees returned or not processed. It is suggested that you book refundable travel arrangements as appropriate if workshop is cancelled.***