



U.S. Burning Plasma Organization e-News
January 15, 2008 (Issue 16)

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Dear Burning Plasma Aficionados:

This newsletter provides a short update on U.S. Burning Plasma Organization activities. E-News is also available online at <http://burningplasma.org/enews.html>. Comments on articles in the newsletter may be sent to the editor (R. Nazikian mnazikian@pppl.gov) or assistant editor (Emily Hooks ehooks@mail.utexas.edu).

Thank you for your interest in Burning Plasma research in the U.S.!

Director's Corner by J. Van Dam

In the Chinese zodiac calendar, this year, 2008, is the "Year of the Rat." Traditionally, the rat was regarded as a protector and bringer of material prosperity. It was also associated with aggression, wealth, charm, and organization (quoting from Wikipedia). Whether this association is at all relevant to recent events in the fusion program, I'll let you decide after I describe what's been happening as we entered the New Year.

Backing up to where we left off in the previous issue of eNews, you will recall that the Science and Technology Advisory Committee (STAC) of the ITER Council, when it met in early November, had identified several high-priority technical issues still to be considered for the ITER design. The ITER Organization quickly organized small international topical groups to address these issues: (1) vertical stability, shape control/poloidal field coils, flux swing in Ohmic operation and central solenoid; (2) ELM control; (3) remote handling; (4) blanket manifold; (5) first wall material; (6) 17 MA discharge capability; (7) cold coil test; (8) vacuum vessel/blanket loading condition; (9) test blanket modules strategy; (10) hot cell design; (11) heating/current drive strategy,

diagnostics and research plan. The topical groups, which include a number of US scientists who had previously been involved in the Design Review Activity, are urgently working to obtain results in a few months, which will be considered at a special STAC meeting to be held April 7-9. The STAC will also hold a regular meeting a month later (May 19-21) to review the Overall Project Cost and Overall Project Schedule documents from the ITER Organization.

Also mentioned in the previous eNews was the National Research Council's review of the 2006 Energy Policy Act Report, concerning US plans for participating in the research program of ITER. The NRC committee charged with carrying out this review met December 14 and 15 in Washington, D.C. The first day was a public session devoted to invited presentations. From the US there were talks by Erol Oktay (USDOE) and Ned Sauthoff (USIPO), plus Earl Marmor and me representing the USBPO. Very good talks were also given by international colleagues: Jerome Pamela (EFDA), David Campbell (ITER), and Shinzaburo Matsuda (JAEA); their participation was highly appreciated. The NRC committee indicated that it would finish its report in a few months.

Several new postings on the USBPO web site should be noted. One is the talk about USBPO activities presented by Nermin Uckan at the Annual Fusion Power Associates Meeting (Oak Ridge, December 4). Also posted are presentations given at the NRC review committee meeting. These can be found at:
<http://burningplasma.org/reference.html>.

The ITER Project will have an exhibition booth at the Annual Meeting of the American Association for the Advancement of Science (Boston, February 14-18). Bonnie Hebert of the US ITER Project Office has been leading the preparation of outreach materials for this purpose, with technical help from the ORNL Creative Media Department. The USBPO is playing a support role, mostly thanks to Don Batchelor. Other assistance has been provided by Princeton Plasma Physics Laboratory (John DeLooper) and General Atomics. We are still looking for some gee-whiz 3D movies about aspects of fusion plasma behavior; please contact me if you have suggestions about what has been done or what could be done. A related education and outreach project is to help prepare a display about the activities of the Office of Fusion Energy Sciences, which will be placed in the lobby of the USDOE headquarters building in downtown Washington, D.C.

Last year the USBPO had tossed around the idea of organizing a summer school on burning plasma physics for graduate students and young researchers. As an initial step we proposed to join forces with the Center for Multi-scale Plasma Dynamics, which already operates an excellent annual Winter School at UCLA. Their organizing board agreed to incorporate a day's worth of lectures on Alfvén instabilities in burning plasmas in this year's school (January 7-12, 2008), whose overall theme was "Plasma Instabilities." The lectures are posted on the Winter School web site:
[\(http://home.physics.ucla.edu/calendar/conferences/cmpd/\)](http://home.physics.ucla.edu/calendar/conferences/cmpd/), and mine is also on the USBPO web site.

Two days after the NRC review committee meeting mentioned earlier, the Congressional Omnibus 2008 Appropriations Bill burst on the scene like a bombshell. Congress withheld the money for the Department of Energy's \$160 million commitment in 2008 for ITER construction, apart from \$10.6 million that was allocated for ITER-related R&D. By now you may have seen the statement from the APS Division of Plasma Physics, the letter from members of the US fusion community, and press releases from several Members of Congress. Last week Friday the Department of Energy released a letter that had been sent by Dr. Raymond Orbach, Under Secretary for Science, to the director-general of the ITER Organization, stating that the US remains committed to meet its obligations to this important international research program, but that certain limitations (described in the letter) will apply. The Office of Fusion Energy Sciences asked that the USBPO, along with other national organizations, immediately circulate copies of this letter to its membership, which was done. Due to the significance of this letter, we also reproduce it in full in this issue of eNews. Of particular relevance to USBPO scientists is the commitment that US work on the remaining design issues for ITER will continue. Since ITER is the key breakthrough project to demonstrate the scientific and technological feasibility of magnetic fusion energy for peaceful purposes, we remain cautiously optimistic that a solution to rectify the funding situation will be found for the Year of the Rat.

Happy Burning-Plasma New Year.

📣 Announcements

Submit BPO-related announcements for next month's eNews to Raffi Nazikian at rnazikian@pppl.gov.

Feature

Reprint of Letter from the Under Secretary for Science's Office, US Department of Energy, Washington, DC

January 10, 2008

Mr. Kaname Ikeda
Director General
ITER Organization

Dear Mr. Ikeda:

As you know, besides a modest amount for supporting research and development, the U.S. fiscal year 2008 appropriation provided no funding for the U.S. Contributions to the ITER Project. I want to let you know that the U.S. is firmly

committed to meeting our obligations under the ITER Joint Implementing Agreement and that we are doing everything possible to rectify the situation.

The U.S. ITER Project Office will continue in operation and we will maintain support for our secondees working at the ITER Organization (IO). For the time being, however, there will be some limitations on our ability to fully participate in ITER activities: we will be forced to defer our 2008 cash contribution to the IO; postpone some U.S. design and R&D activities; and forego initiating our long-lead hardware procurements. Given their near-term importance, we will remain engaged in two key areas: helping the IO resolve the major technical issues identified by the ITER Science and Technology Advisory Committee, and assisting the IO to develop a credible ITER construction schedule. Lastly, we will continue to actively participate in the business of the ITER Council and its subsidiary bodies, the Science and Technology Advisory Committee, the Management Advisory Committee, and the Financial Audit Board.

In the months ahead, I will keep you informed of future developments on the U.S. budget situation and any changes in our ability to meet the U.S. commitments to the IO. If you have questions or concerns, please contact Mr. Todd Harding at 202-586-0505 or todd.harding@science.doe.gov

Sincerely,

Raymond L. Orbach
Under Secretary for Science
U.S. Department of Energy

2008 BPO-Related Meetings

Jan 7-10

ITPA SOL & Divertor Physics Mtg
Toledo, Spain

Jan 14-25

[The US Particle Accelerator School](#)
Santa Rosa, CA

Feb 14-18

[Am Assoc for the Advancement of Science Annual Mtg](#)
Boston, MA

Feb 19-20

[US DOE FESAC Public Meeting](#)
Gaithersburg, MD

Feb 20-22

[IAEA Int'l Wksp on Challenges in Plasma Spectroscopy for Future Fusion Research Machines](#)
Jaipur, India

Mar 10-13

[15th Joint Workshop on Electron Cyclotron Emission & Electron Cyclotron Resonance Heating](#)
Yosemite, CA

Mar 20-Apr 2

Int'l Sherwood Fusion Theory Conference
Boulder, CO

Mar 24-28

[Progress in Electromagnetics Research Symposium](#)
Hangzhou, China

Apr 1-4

[35th Annual Conf on the IOP Plasma Physics Group](#)
London, UK

Apr 7-9

ITER Science and Technology Advisory Committee Mtg
Cadarache, France

Apr 12-15

[International Conference on HEDP/HEDLA-08](#)
St. Louis, MO

Apr 25-28

Transport Taskforce Annual Mtg
Boulder, CO

May 5-6

[PRC Magnetic Fusion Collaboration Workshop](#)

Austin, TX

May 11-15

[17th High-Temperature Plasma Diagnostics Conference](#)

Albuquerque, NM

May 12-16

[6th Int'l Symp on Non-Thermal Plasma Technology](#)

Taipei, Taiwan

May 15-16

[Magnetics 2008 Conference](#)

Denver, CO

May 18-23

[5th Int'l Conf on Physics of Dusty Plasma](#)

Ponta Delgada, Azores, Portugal

May 26-28

[18th Int'l Conf on Plasma Surface Interactions in Controlled Fusion Devices \(PSI-18\)](#)

Toledo, Spain

Jun 8-12

[ANS Annual Meeting](#)

Anaheim, CA

Jun 9-13

[35th EPS Conference on Plasma Physics](#)

Hersonissos, Crete, Greece

Jun 16-19

[23rd Symposium on Plasma Physics and Technology](#)

Prague, Czech Republic

Jun 15-19

[35th IEEE Int'l Conf on Plasma Science \(ICOPS2008\)](#)

Karlsruhe, Germany

Jun 24-27

Innovative Confinement Concepts

Reno, NV

Jul 6-11

[17th Int'l Conf on High-Power Particle Beams \(BEAMS'08\)](#)

Xi'an, China

Jul 13-20

[37th Scientific Assembly of the Committee on Space Research and Associated Events \(COSPAR 2008\)](#)

Montreal, Canada

Jul 15-19

[19th Europhysics Conf on the Atomic and Molecular Physics of Ionized Gases \(ESCAMPIG-2008\)](#)

Granada, Spain

Jul 27-Aug 2

[7th Int'l Wkshp on Strong Microwaves: Sources and Applications](#)

Nizhny Novgorod, Russia

Aug 25-29

24th Summer School & Int'l Symp on the Physics of Ionized Gases

Novi Sad, Serbia

Sep 1-4

[13th EU-US TTF Wksp](#)

Copenhagen, Denmark

Sep 8-12

[Int'l Congress on Plasma Physics](#)

Fukuoka, Japan

Sep 15-19

[25th Symp on Fusion Technology \(SOFT\)](#)

Rostock, Germany

Sep 22-27

[Int'l Conf & School on Plasma Physics & Controlled Fusion and 3rd Alushta Int'l Wksp on the Role of Electric Fields in Plasma Confinement in Stellarators and Tokamaks](#)

Crimea, Ukraine

Sep 25-27

[18th IAEA Technical Mtg on Research using Small Fusion Devices](#)

Crimea, Ukraine

Sep 28-Oct 2

[18th ANS Topical Mtg on the Technology of Fusion Energy](#)

San Francisco, CA

Oct 12-18

22nd IAEA Fusion Energy Conf - 50th Anniversary of Controlled Nuclear Fusion Research

Geneva, Switzerland

Oct 20-25

[11th Int'l Conf on Electrostatic Precipitation \(ICESP-XI\)](#)

Hangzhou, China

Oct 20-22

ITPA CBDM, Transport, and Pedestal & Edge Physics Mtgs

Milan, Italy

Nov 9-13
[ANS Winter Meeting](#)
Reno, NV

Nov 17-21
[50th APS-DPP](#)
Dallas, TX

Nov 23-25
MHD Control Workshop
Austin, TX

Please submit your 2008 events to Emily Hooks at ehooks@mail.utexas.edu.

For more Fusion Research-related events, visit the USBPO Upcoming Events page online at <http://burningplasma.org/events.html>.