



U.S. Burning Plasma Organization e-News
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Dear Burning Plasma Aficionado:

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 mazikian@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

As I write this column, I'm also preparing a talk for the July 16-17 FESAC Meeting with the title "USBPO Update and ITER Design Review Activity." That title fairly well sums up the content of the present article.

One of the most recent USBPO activities was the submission of a Diagnostics White Paper to the Office of Fusion Energy Sciences on July 12. The White Paper arose from the workshop organized by the Diagnostic Topical Group back in February, at which it was generally recognized that the US needs an initiative for the development of innovative diagnostics for burning plasma experiments. Elsewhere in this issue of eNews there is a notice about this White Paper, with information about where it is posted on the USBPO web site. I'd like to credit the topical group leaders (Rejean Boivin, Jim Terry, and Steve Allen) for their fine work in writing the White Paper.

Incidentally, in the June issue of eNews, it was announced that the document "Progress in the ITER Physics Basis" had been published as a special issue of *Nuclear Fusion* and that it was available online. At the recent annual meeting of the ITPA Coordinating

Committee—recall that the ITPA was the lead organization in getting this huge document written—Dr. Paul Thomas, the editor of *Nuclear Fusion*, announced that it had been downloaded 9,000 times during its first two weeks of availability. I trust that our USBPO members were responsible for a significant percentage of these downloads!

I myself attended this meeting of the ITPA Coordinating Committee, which was held in Cadarache during June 18-20. The presentations about the international activities of the ITPA topical groups were impressive, and the US contributions were, I thought, highly commendable. Ron Stambaugh, the current chair of the ITPA, provides excellent leadership. The USBPO can be proud that it is integrated with the ITPA on the national level. One of the points discussed at this meeting was that as the ITER Organization evolves, the relationship of the ITPA to ITER might also evolve.

During the ITPA Coordinating Committee meeting, there were several talks related to the ITER Design Review efforts. The rest of this column will focus on this subject, which has taken up much of the energy of the USBPO recently.

The Design Review system was set up in December 2006, with eight Working Groups, in order to address the 250+ Issue Cards that were submitted in the autumn of last year. The USBPO, along with institutional program managers, played a role in helping the US ITER Project Office and OFES decide on priorities, performers, and levels of effort for the various urgent-issue tasks, in particular for Working Group #1 (Design Requirements and Physics Objectives). Because the US Office of Management and Budget advised DOE that all ITER Design Review work must be funded out of the US ITER Total Project Cost, the Office of Fusion Energy Sciences issued a guidance letter on June 15. According to the letter (which can be found on the OFES web site at <http://www.ofes.fusion.doe.gov/News/ITERDesignReviewGuidance.pdf>), the US ITER Project Office will issue funding/work packages for major performers for Design Review tasks (where “major” means in excess of a *de minimis* level of a week or two). Ongoing broader ITER-related research is not, however, included—e.g., the joint experiments and general burning plasma research coordinated through the ITPA. The guidance letter estimates a total US work effort of 15-20 FTEs through the end of CY 2007, plus international travel support.

A very important set of meetings will be occurring this week in Cadarache, to make decisions on so-called Design Change Requests (DCRs, for those who like acronyms). Half-day sessions are scheduled with each of the eight Working Groups. In addition to the leaders and representatives of the eight Working Groups, the meetings will be attended by ITER top management and leaders from the seven ITER member parties. One example of a DCR to be submitted this week concerns requirements proposed for ELM control and Resistive Wall Mode coils. A second set of Design Change Requests decision meetings has already been scheduled for September.

In short, the ITER Design Review system is now geared up and moving swiftly. We all realize that a comprehensive Design Review will lead to the best facility possible to achieve ITER’s vital mission. The US is making all reasonable efforts to ensure the success of the ITER Project by supporting the Design Review with appropriate expertise and effort.

📣 **Announcements**

Boundary and Engineering Science Topical Groups Mini-Conference to be held during APS-DPP by Tom Rognlien

The BPO Boundary and Engineering Science topical groups are supporting and encouraging participation in a one-day mini-conference entitled "The First Microns of the First Wall" during the Nov. 12-16 APS-DPP meeting in Orlando, FL (day TBD). This mini-conference will focus on near-surface materials issues resulting from plasma interactions. The meeting is being organized by the Edge Coordinating Committee; contact Tom Rognlien (troggnlien@llnl.gov) to learn details of submitting a contributed abstract before the July 20 APS-DPP deadline.

Diagnostics White Paper

One of the outcomes of the USBPO Diagnostics Workshop held earlier this year was a realization that there is a gap in the US fusion energy sciences program, in terms of lack of support for the development of innovative diagnostics for burning plasma experiments.

The leaders of the USBPO Diagnostics Topical Group (Rejean Boivin, Jim Terry, and Steve Allen) have drafted a White Paper that explains this gap, describes as yet uncredited ITER diagnostics R&D needs, and proposes an initiative to address the situation. (<http://burningplasma.org/reference.html>)

The research committee and the head of the BPO endorses this white paper and hopes that the information provided will be of value in planning a robust burning plasma program within the US.

BPO-Related Meetings

Sep 9-15
Energy Conversion Systems in Tokamak Reactor
Erice - Italy

Sep 10 -13
EUROMAT 2007 -Materials for Fusion Applications
Nuremberg, Germany
<http://www.euromat2007.fems.org/>

Sep 24-28
International Conference on Burning Plasma Diagnostics
Villa Monastero, Varenna, Italy
<http://www.ispp.it/>

Sep 26-28
11th IAEA Technical Meeting on H-mode and Transport Barrier
Tsukuba, Japan
<http://www-jt60.naka.jaea.go.jp/h-mode-tm-11/>

Sep 30-Oct 5
8th Int'l Symp. on Fusion Nuclear Technology - ISFNT-8
Heidelberg, Germany
<http://iwrwww1.fzk.de/isfnt/>

Nov 12-16
49th APS-DPP Meeting
Orlando, FL
<http://www.aps.org/meetings/unit/dpp/index.cfm>

Dec 10-14
13th International Conf. on Fusion Reactor Materials
Nice, France
<http://www-fusion-magnetique.cea.fr/icfrm13/index.html>

For more 2007 Fusion Research-related events, visit the USBPO Upcoming Events page online at <http://burningplasma.org/events.html>.