

U.S. Burning Plasma Workshop Draft Agenda – Diagnostics Breakout Session
Oak Ridge National Laboratory, Dec 7 -9, 2005

A. Recent Developments: **Leader – D. Johnson**

1. What major BP-related developments (in theory, modeling, experiment and technology) have occurred in this area since the Snowmass 2002 study?

Discussion to clarify material presented in Plenary Talk - (8:30-9:00)

- Organizational
 - ITPA Topical/Specialist Working Groups/Diag. Database
 - Diagnostic WG proposals; US packages
 - Credited/uncredited categories
- Review of ITER measurement requirements, justifications, assessments
- New ITER-Relevant Diagnostic Developments
- Diagnostic integration efforts

B. Implications and Outstanding Issues: **Leader – S. Allen**

2. What issues remain to be resolved for a successful BP experiment in ITER?

Discussion of control needs and the requirements they place on diagnostics (9:00-9:15)

IT effort to define CODAC requirements M. Greenwald (9:15-9:45)

Discussion of ITPA high priority diagnostic issues (9:45-10:15)

- Vertical neutron camera
- Confined alpha – collective scattering
- First mirror Issues
- Magnetic sensors and integrators
- Dust measurement

Other Diagnostic issues – Brief Presentations followed by discussion

Providing expert review of ITER diagnostics K. Young **(10:30-10:40)**

Performance simulation of ITER diagnostics T. Casper **(10:40-11:00)**

Integration issues - neutronics tools/CAD support B. Nelson **(11:00-11:15)**

Reliability/Maintainability issues on ITER **(11:15-11:30)**

- Drawer concept and central tubes D. Johnson
- Hydrogen phase shakedown

DNB/Heating Beam issues for active spectroscopy K. Young **(11:30–11:50)**

Parallel Session with Control Group
8:30 – 9:45

Coffee

Lunch

3. What are the consequences of resolving these issues, or not, in the next ~10 years?

Will present ITER diagnostics meet measurement requirements?

Suitability of ITER measurement requirements R. Boivin (1:00-1:15)
T_e example G. Taylor

Status of capability of presently planned techniques to meet ITER measurement requirements D. Johnson (1:15-1:30)

4. What issues should be resolved by a successful BP experiment?

Diagnostic measurement needs to characterize and control DEMO K. Young (1:30-1:45)

C. What should the U.S. fusion community do: Leader – D. Johnson

5. What contributions can/should the U.S. fusion program make to resolving these issues?

Discussion of areas for active community involvement (1:45-2:20)

Developing new measurement techniques
Proto-typing ITER diagnostic concepts on existing devices
new concepts for better measurements
‘US’ systems
‘non-US’ systems
‘uncredited’ systems
in-situ alignment and calibration systems
shutter concepts and other areas

Understanding mirror degradation on existing devices C. Skinner/J. Brooks/D Rudakov (2:20-2:45)
Dedicated experiments and modeling

6. How should the BPO be structured to best help the community make these contributions?

Workforce issues & BP diagnostic development - DOE perspective (2:45-3:00)

Coffee

Diagnostic Task Force and Working Group (3:15-4:30)

How they might work R. Boivin/S. Allen
How should the US-ITPA participation be organized?
How can we facilitate work by US members on non-US systems?
Participate in reviews?
How can we coordinate physics enabling work between diagnosticians and community in general?..
How can we insure we get the best possible diagnostic set possible?
How can we facilitate efficient remote participation in ITER?

Summary Preparation (4:30-5:30)

Parallel Session
with Control
Group 4:30-5:30

