

6th STCC MVC Topics

February 8, 2010, 3-5PM, B205, PPPL

- Agenda (5 min)
- DOE comments and update (20 min)
- Planning for ST presentations at BPM, 3/11-12/2010 (45 min)
- Draft content of “U.S. ST Program Overview”
- Update STCC position on disruption control and liquid lithium (20 min)
- Vision or direction for the 6-10 ST research priorities (20 min)
- Actions prior to 7th STCC MVC (10 min)

Planning ST Presentation at BPM – working information

- Total time: 75 min, in addition to short period for questions and answers from audience (update)
- Proposed components of presentation
 1. U.S. ST Program Overview – Peng (<10 min)
 2. Pegasus and LTX Programs, Operations, and Upgrades – Fonck (~20 min)
 3. NSTX Research Program – Menard (~25 min)
 4. NSTX Operation and Upgrade – Ono (~20 min)

[Note: time allocations to be finalized; order of 2 and 3-4 to be determined.]
- Final presentation files to be collected into on file at the BPM

Draft Content of U.S. ST Program Overview

1. U.S. ST Program mission and goals for the next 20 years (STCC Report: BP, FNS, PMI)
2. 5-year ST research priorities driven by the ST mission and goals (STCC Report)
3. ST research capabilities/tools for next 5-years, including high-leverage collaborations with U.K. and Japan ST Programs
4. Role of STs in the broad Fusion Energy Sciences Program (ITPA, fusion DEMO, etc.)
5. Cost and time effective activities and upgrades (table of all key research areas and research capabilities for each ST goals)

Pegasus, LTX, NSTX Presentations

6. 6-10 year direction for U.S. ST Program, to maximize effective contributions to MFES Program

Pegasus-LTX, and NSTX Presentations

- Common approach of content
 1. Research goals/mission, roles in the U.S. ST Program
 2. Baseline research, operation, upgrades
 3. Proposed incremental research, upgrades
- ITPA, DEMO oriented research included in the NSTX Research Program
- NSTX Upgrade proposal combined with NSTX Ops

STCC Position on Stability/Disruption Control and Liquid Lithium

- High beta (\sim with-wall limits) stability control aiming toward BP and DEMO
- Disruption avoidance toward disruption-free operation for FNS and PMI
- Liquid lithium decisions will depend on NSTX LLD, LTX research progress
- LLD an option for NSTX-U and possible PMI dedicated research
- LLD role in FNS at present “unknown”, needs dedicated R&D to provide basis for impact assessment for FNS

Maximizing ST Contributions to MFES Program – 6-10 Year Perspective

- Maintain ST goal Options: BP, FNS, PMI
- Earliest decision for next U.S. major fusion facility: 2015
- Assume good chance for ST to compete for one of these goals to be selected by U.S. MFES (not necessarily limited to ST configuration)
- 6-10 year research priorities should maintain breadth to account for un-predictability