NSTX

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Solenoid Free Plasma Startup

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U Maryland
U Rochester
U Washington
U Wisconsin

R. Raman, D. Mueller, S.C. Jardin
University of Washington/PPPL

B-318, PPPL, Tuesday March 15th

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NSTX Research Forum for FY2011-12 Research
March 15-18, 2011
PPPL, Princeton, NJ

Culham Sci Ctr
U St. Andrews
York U
Chubu U
Fukui U
Hiroshima U
Hyogo U
Kyoto U
Kyushu U
Kyushu Tokai U
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Niigata U
U Tokyo
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TRINITI
KBSI
KAIST
POSTECH
ASIPP
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR, Czech Rep
U Quebec

SFPS Priorities in 2011 & 2012

- Minimize reliance on central solenoid flux to achieve 0.8-1MA plasma currents using early NBI/HHFW heating and by reducing impurities
- Assess heating and current drive in inductive low plasma current discharges using HHFW
- Determine maximum achievable closed flux currents with CHI start-up
- Start CHI discharges with a pre-charged central solenoid

Agenda for SFPS TSG

B252 on Thursday, March 17

Minimization of solenoid flux usage using Transient CHI startup Raman, Jarboe, Nelson, Mueller, et al.	10:30AM
CHI startup using a pre-charged central solenoid Nelson, Mueller, Raman, Jarboe, et al.	11:00AM
Progress on simulations of helicity injection in NSTX Hooper	11:30AM
HHFW heating of inductively initiated plasmas from 250-400kA Taylor	12:00PM
HHFW heating of a CHI-initiated plasma Taylor	12:10PM
Low plasma current fully non-inductive HHFW H-mode Taylor	12:20PM
Discussions	12:30PM

Run Time Request and Guidance (FY11+12)

Milestone & high-priority research adequately covered by proposal submissions

	Minimum/Desired
Minimization of solenoid flux	8 / 12
CHI with pre-charged CS	2 / 4
CHI simulations in NSTX	0 / 0
HHFW heating of inductive plasmas	1 / 1.5
HHFW heating of a CHI-initiated plasma	1 / 1.5
Low Ip fully non-inductive HHFW H-mode	1 / 1.5
Total	**13** / 20.5
Guidance	4 (FY11) + 5.5 (FY 12) = **9.5**

Important factors: Vessel conditions during early run, time for conditioning electrodes, dual LITER availability, out gassing of new metal tiles