

Draft NSTX 2006 Run Schedule outline (R. Raman, Jan 18, 2006)

4-Boundary, 5-T&T, 6-ISD, 7-SFPS, 8-WavePart, 9-MHD

Bold: meets milestone, **Red:** meets ITPA task,

Bold Red: meets milestone and ITPA task

Weeks 0 to 2

No	Author	Title	Run Days
1.0	Neumeyer	Engineering ISTP-001 (3 days)	0
1.1	Menard	Calibration of equilibrium magnetics (PF, OH, TF) - 0.5 days	0
1.2	Menard	Calibration of RWM/EF detection magnetics (SPAs/RWMs) - 0.5 days	0
1.3	M. Bell	Diamagnetic Loop calibration - 0.25 days	0
		Plasma startup and Pre Lithium Expts.	
2.0	Mueller, Gates, Kugel, Smith, Stevenson, Menard	Plasma startup and PCS testing - High k-scattering test - Movable glow probe test (XMP) - NBI commissioning - RWM/EF Mode detection (PB) test - Supersonic gas jet test - All diagnostics testing	2
3.0		Start Experiments before Li	
4.1	Vlad	P35 - Div heat load and detachment (EdgePhys)	1
7.1	Raman	P13 - Transient CHI (SFPS)	1
2.1	Levinton	MSE calibration at 0.45T, Src A - Rayleigh scattering (finished January 23-25)	0.5
8.1	Wilson	XMP for RF conditioning (Wave/Part)	0.5
		Start Lithium Tests	
4.2	Kugel	P30 - Li deposition (EdgePhys) - Test RF application on some shots?	2
6.1	Menard	P78- develop long pulse ~ 1.5-2 sec H-mode with pf1B shape, LSN, early H-mode? (, e.g. #116318 with low density)	1
6.2	Gates	P92 - goal2 - develop long pulse ~ 1.0-1.5sec H-mode DND, Ip ~ 1 MA (e.g. #117707 with low density)	1
4.3	Skinner, Boedo, Williams	P60, 59, 26 - demonstrate and execute a controlled density scan in H-mode with e.g. n/n _{Greenwald} 0.25, 0.375, 0.5, 0.625, 0.75, 0.875, and 1; examine impact on turbulence, deposition, SOL and divertor characteristics	1
	Total	Satisfy boundary milestone	10.0

Weeks 3 and 4: Milestone and ITPA driven XPs

No	Author	Title	Run Days
9.1	Menard	RWM/EF mode detection algorithm & preprogrammed EF correction to PCS (XMP)	0.5
5.1	Smith	p new- High k system verification	0.5
5.2	Levinton & others	P12- goal3 - develop low density L-mode Reversed Shear scenario, time permitting (Jon, Dave, Fred L., e.g. ?) - Highly benefits from high-k system	1
8.2	Heidbrink, Fredrickson, Crocker	Fast-ion Transport by Fishbone instabilities & Documentation of TAE/EPM fast ion losses	1
9.2	Menard	RWM/EF mode detection algorithm & preprogrammed EF correction to PCS (XMP)	1
9.3	Menard	P108 - Comparison of n=1 EFC to DEFC	1
9.4	Sabbagh	P97 or 102 - Active stabilization of RWM	1
8.4	S. Diem, G. Taylor (Thesis)	P2- Thermal EBW emission and oblique O-mode coupling efficiency in L and H-mode plasmas	1
7.2	Raman	P13 - Transient CHI, requires new MOV	1
5.3	Stutman	P9 - perturbed electron transport with collisionality, heat flux and current. Highly benefits from high-k system	1
5.4	Delgado (Thesis)	P22 - Impurity transport in H-modes - Highly benefits from high-k system	1
	Total	Satisfy T&T milestone	10

Weeks 5 and 6: Milestone and other not ITPA driven XPs - **preliminary**

No	Author	Title	Run Days
9.5	Menard	P108 - Comparison of n=1 EFC to DEFC	1
9.6	Sabbagh	P97 or 102 - Active stabilization of RWM	1
4.4	Maingi	P77 - pedestal dependence on aspect ratio	1
4.5	Hubbard	P-8 C-Mod/MAST/NSTX small ELM regime comp.	1
		MSE calibrations at 0.5 to 0.55T ?	0.5
5.5	Kaye	P87 - Bt to 0.45T sacling on confinement - Requires 0.55T?	0.5
6.3	Kaye	P46 (Kaye) ELM severity & confinement on shape (ISD) - Requires 0.5T?	1.0
8.2	Fredrickson	P18 - TAE/EPM impact on fast ion transport - Requires 0.55T?	1
6.4	Maingi	P45 - Extension of enhanced H-mode through current profile	0.5
9.7	Strait	P72 - Optimize EF correction vs rotation	0.5
9.8	Gates	P?- High toroidal beta vs shaping	1.0
	Total	Satisfy CHI & MHD milestones	9

Weeks 7 to 9: (Contingency - TBD based on Milestone fulfillment)

No	Author	Title	Run Days
7.x	Mueller	P1 - Edge current drive	1
5.x	M. Bell	P95 - Scaling studies for NSTX upgrades	1
6.x	Sontag	P105 - RWM dissipation comp to theory	1
6.x	Leuer	P68 - XMP for rtEFIT for Leuer	0.5
8.x	Bernabei	P81 - Missing RF power, requires RF probe	1
		MSE calibrations at 0.5 to 0.55T ?	0.5

Counter injection campaign (draft - TBD after week 6)

During the maintenance break - Reverse both TF and Ip (2 days)
 Magnetics calibration, diamagnetic loop calibration, coil ISTPs (1 day)
 Test the PCS system (1 day)

Week 10

No	Author	Title	Run Days
17.0	Raki	Reverse TF and Ip	0
17.1	Neumeyer, Menard, M. Bell	Coil ISTPs, magnetics calibration, diamagnetic loop calibration	0
	Gates, Mueller	PCS test	1
18.0	Kaye, Darrow	P115, 116 - Effect on Tau-E as Ip and NBI pwr are varied. Beam blips. <ul style="list-style-type: none"> • Effect on density and temperature profiles, comparison with MAST [Akers_84] • Current profile modification [Menard_79] • Effect on rotation profile and rotational shear [R. Bell_?] • Effect on Turbulence [high-k scattering group ?] • Effect on fast ion driven modes [Fredrickson_?] • ELM magnitude and direction of propagation using FireTip [Lee_73] • At low beam power study L-mode plasmas [Stutman_71] • QH-mode access [West_85] 	2
18.1	Menard	P79 - current profile modification	0.5
18.2	Maingi	P85 - QH-mode	0.5
18.3	Bernabei	P82 - Reverse Bt and Ip	0.5
		Reverse Bt to normal polarity	0
		ISTP and diamagnetic loop calibration	0
18.3	Bernabei	P82 - Reverse Ip	0.5
	Total		5.0

Week 11 (TDB)

No	Author	Title	Run Days
	Levinton	MSE calibrations at 0.5 to 0.55T	0.5
	Levinton	MSE calibration at 0.45T	0.5
	Menard	Magnetics calibrations	1.0