

# FY10 NSTX RUN LOG

**FY 10 Run started on March 8, 2010 and completed on September 24, 2010.**

**FY 2010 Operation Targets: Base - 14 run weeks, ARRA - 1 run weeks**

**Completed: Total - 15.43 run weeks producing 2941 plasmas**

**Completed: Base -14.42 run weeks producing 2770 plasmas**

**Completed: ARRA -1.01 run weeks producing 171 plasmas**

<u>Date</u>	<u>Run Time (Daily hrs)</u>	<u>Accumulated FY Run Time (hrs)</u>	<u>Accumulated FY Run Weeks (40 hours / week)</u>	<u>Plasma Attempts</u>	<u>Plasma Achieved</u>	<u>Experimental Topics</u>	<u>XP/XMP #</u>
3/29/10	0	0	0.00	0	0	Machine conditioning.	XMP-64
3/30/10	0	0	0.00	0	0	Machine conditioning.	XMP-64
3/31/10	6.7	6.7	0.17	29	26	Div. Strike Point Control	XMP-66
4/1/10	5.13	11.83	0.30	17	16	Div. Strike Point Control	XMP-66
4/2/10	8.83	20.66	0.52	37	35	Liquid Lithium Divertor	XP-1000
<b><u>Week's End</u></b>		<b><u>20.66</u></b>	<b><u>0.52</u></b>				
4/5/10	9.03	29.69	0.74	40	35	Liquid Lithium Divertor	XP-1000
4/6/10	6.81	36.5	0.91	28	26	Liquid Lithium Divertor	XP-1000
4/7/10	8.64	45.14	1.13	46	44	Liquid Lithium Divertor	XP-1000
4/8/10	9.6	54.74	1.37	45	42	Liquid Lithium Divertor	XP-1000
4/9/10	6.53	61.27	1.53	27	24	Early error field correction to advanced scenarios	XP-1004
<b><u>Week's End</u></b>		<b><u>61.27</u></b>	<b><u>1.53</u></b>				
4/12/10	0	61.27	1.53	0	0	LITER Replacement	
4/13/10	9.05	70.32	1.76	37	34	Beta-feedback control Optimized RWM feedback for high beta_n	XMP-65 XP-1023
4/14/10	0	70.32	1.76	0	0	MSE Calibration	
4/15/10	9.53	79.85	2.00	49	46	Optimized RWM feedback for high beta_n Determination of weak RWM stability rotation profiles	XP-1023 XP-1020
<b><u>Week's End</u></b>		<b><u>79.85</u></b>	<b><u>2.00</u></b>				
5/27/10	4.58	84.43	2.11	22	21	Relay Control X-point height and outer strike point control X-point height and outer strike point control	XMP-69 XP-1003 XP-1003
5/28/10	6.47	90.9	2.27	31	29	Early error field correction to advanced scenarios	XP-1004
<b><u>Week's End</u></b>		<b><u>90.9</u></b>	<b><u>2.27</u></b>				
6/1/10	9.53	100.43	2.51	50	49	Density dependence of L-H threshold	XP-1028
6/2/10	6.07	106.5	2.66	26	25	Global MHD and ELM stability vs. edge current RMPs below the ELM triggering threshold for impurity screening	XP-1031
6/3/10	8.77	115.27	2.88	46	43	Long-Pulse Enhanced Pedestal H-modes	XP-1027 XP-1064
6/4/10	9.19	124.46	3.11	47	45	Long-Pulse Enhanced Pedestal H-modes Heat flux profiles for the FY2010 Joint Milestone	XP-1064 XP-1043
<b><u>Week's End</u></b>		<b><u>124.46</u></b>	<b><u>3.11</u></b>				
6/7/10	7.59	132.05	3.30	42	41	HHFW Plasma Conditioning	XMP-26
6/8/10	9.85	141.9	3.55	52	51	HHFW Plasma Conditioning	XMP-26
6/9/10	8.4	150.3	3.76	47	44	HHFW Plasma Conditioning RF Heating at Divertor/SOL regions	XMP-26 XP-1017

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6/11/10	2.67	152.97	3.82	10	9	HHFW Plasma Conditioning	XMP-26
<b><u>Week's End</u></b>		<b><u>152.97</u></b>	<b><u>3.82</u></b>				
6/14/10	9.52	162.49	4.06	52	50	HHFW Plasma Conditioning	XMP-26
						RF Heating at Divertor/SOL regions	XP-1017
						RF Heating at Low Current Plasmas	XP-1009
6/15/10	9.18	171.67	4.29	50	48	Heat flux profiles for the FY2010 Joint Milestone	XP-1043
6/16/10	9.45	181.12	4.53	53	52	X-point height and outer strike point control	XP-1003
						Early discharge modification to reduce late impurity content	XP-1005
6/17/10	10.94	192.06	4.80	57	57	HHFW Plasma Conditioning	XMP-26
						RF Heating at Low Current Plasmas	XP-1009
						BES commissioning	XMP-70
6/18/10	6.52	198.58	4.96	25	24	HHFW Plasma Conditioning	XMP-26
						Commission combined PF4/PF5 coil operations	XMP-68
<b><u>Week's End</u></b>		<b><u>198.58</u></b>	<b><u>4.96</u></b>				
						Core impurity density and radiated power reduction using variations in LLD divertor conditions	XP-1002
6/21/10	6.85	205.43	5.14	36	34	Global MHD and ELM stability vs Edge Current	XP-1031
6/22/10	10.46	215.89	5.40	56	50	BES commissioning	XMP-70
6/23/10	9.06	224.95	5.62	50	49	H-mode TAE/GAE avalanches	XP-1011
<b><u>Week's End</u></b>		<b><u>224.95</u></b>	<b><u>5.62</u></b>				
6/28/10	8.2	233.15	5.83	39	38	Optimization of beta-control	XP-1019
6/29/10	11.52	244.67	6.12	63	61	Joint NSTX-DIII-D poloidal rotation experimen	XP-1041
						X-point height and outer strike point control	XP-1003
6/30/10	9.58	254.25	6.36	47	43	Increasing the Range of Achievable Pedestal Height	XP-1044
<b><u>Week's End</u></b>		<b><u>254.25</u></b>	<b><u>6.36</u></b>				
7/27/10	8.97	263.22	6.58	39	33	Commission combined PF4/PF5 coil operations	XMP-68
7/28/10	9.53	272.75	6.82	47	41	Increasing the Range of Achievable Pedestal Height	XP-1044
7/29/10	9.2	281.95	7.05	50	48	Characterization of ELM heat flux profiles	XP-1046
7/30/10	9.29	291.24	7.28	44	44	LLD Pumping documentation	XP-1041A
<b><u>Week's End</u></b>		<b><u>291.24</u></b>	<b><u>7.28</u></b>				
8/2/10	7.08	298.32	7.46	34	30	Edge Zonal Flows and Blob Formation	XP-1067
						Impact of Outer Squareness on High-Kappa	XP-1058
8/3/10	10.33	308.65	7.72	54	49	Impact of Outer Squareness on High-Kappa	XP-1058
						Snowflake divertor characterization in NSTX	XP-1045
						Optimized RWM feedback for high beta_n	XP-1023
8/4/10	6.25	314.9	7.87	30	27	Halo current study w/ extended diagnostic capability	XP-1021
<b><u>Week's End</u></b>		<b><u>314.9</u></b>	<b><u>7.87</u></b>				

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8/9/10	4.37	319.27	7.98	19	17	LLD Commissioning	XP-1059
8/10/10	9.32	328.59	8.21	49	48	LLD Commissioning	XP-1059
8/11/10	8.81	337.4	8.44	39	39	LLD Commissioning	XP-1059
						LLD Pumping	XP-1001
8/12/10	11.58	348.98	8.72	65	62	Machine conditioning.	XMP-64
						LLD Characterization part II	XP-1059
						Characterization of intrinsic	
						torque using torque	
8/13/10	9.43	358.41	8.96	54	50	transients	XP-1042
						Core impurity density and	
						radiated power reduction	
						using variations in LLD	
						conditions	XP-1001
<b><u>Week's End</u></b>		<b><u>358.41</u></b>	<b><u>8.96</u></b>				
						Measurements of heat flux	
						profiles for the FY2010 Joint	
8/16/10	9.28	367.69	9.19	48	41	Research Milestone	XP-1043
						Measurements of heat flux	
						profiles for the FY2010 Joint	
8/17/10	10.48	378.17	9.45	57	52	Research Milestone	XP-1043
						RMP Threshold of ELM	
						Modifications	XP-1048
						LQG controller for RWM	
8/18/10	9.5	387.67	9.69	46	40	stabilization	XP-1022
						Determination of weak	
						RWM stability rotation	
8/19/10	9.79	397.46	9.94	54	52	profiles	XP-1020
						Optimized RWM feedback	
						for high beta_n	XP-1023
						Snowflake divertor	
8/20/10	9.42	406.88	10.17	48	48	characterization in NSTX	XP-1045
						Characterization of ELM	
						heat flux profiles	XP-1046
<b><u>Week's End</u></b>		<b><u>406.88</u></b>	<b><u>10.17</u></b>				
8/23/10	6.5	413.38	10.33	36	35	HHFW Plasma Conditioning	XMP-26
8/24/10	11.4	424.78	10.62	61	58	HHFW Plasma Conditioning	XMP-26
8/25/10	7.06	431.84	10.80	34	33	HHFW Plasma Conditioning	XMP-26
						RF Heating at Low Current	
						Plasmas	XP-1009
						Characterization of ELM	
8/26/10	11.43	443.27	11.08	62	56	heat flux profiles	XP-1046
						Snowflake divertor	
						characterization in NSTX	XP-1045
						RMP Threshold of ELM	
						Modifications	XP-1048
						Halo current study w/	
						extended diagnostic	
8/27/10	6.59	449.86	11.25	34	31	capability	XP-1021
						Effects of ELM control with	
						RMP on edge power fluxes	
						between and at ELMs	XP-1026
<b><u>Week's End</u></b>		<b><u>449.86</u></b>	<b><u>11.25</u></b>				
						Effects of ELM control with	
						RMP on edge power fluxes	
						between and at ELMs	XP-1026
						Dependence of PLH on	
						Radius and triangularity of	
						the X-point	XP-1029
						Core impurity density and	
						radiated power reduction	
						using variations in LLD	
8/31/10	9.76	469.09	11.73	52	51	divertor conditions	XP-1002
						Lithium Aerosol for impurity	
						reduction	XP-1056

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9/1/10	8.35	477.44	11.94	45	43	Joint NSTX-DIII-D poloidal rotation experimen	XP-1041
						LLD Electrodes Bias for SOL Control	XP-1051
9/2/10	10.22	487.66	12.19	53	49	Study of Angelfish instability & effect of HHFW	XP-1014
						Impact of Outer Squareness on High-Kappa	XP-1058
9/3/10	9.6	497.26	12.43	53	50	High-kappa Neutral Beam Heated Scenarios with Improved Control and LLD	XP-1006
<b>Week's End</b>		<b><u>497.26</u></b>	<b><u>12.43</u></b>				
9/7/10	4.54	501.8	12.55	11	8	Flux saving and improved coupling to OH	XP-1034
9/8/10	9.52	511.32	12.78	53	48	Flux saving and improved coupling to OH	XP-1034
9/9/10	11.45	522.77	13.07	64	55	Flux saving and improved coupling to OH	XP-1034
9/10/10	5.93	528.7	13.22	30	20	Flux saving and improved coupling to OH	XP-1034
<b>Week's End</b>		<b><u>528.7</u></b>	<b><u>13.22</u></b>				
9/13/10	4.52	533.22	13.33	21	21	Synergistic effects between 3D fields and vertical jogs in ELM pacing	XP-1025
9/14/10	10.35	543.57	13.59	57	57	Study of the Parametric Dependence of High-k Turbulence	XP-1037
9/15/10	8.42	551.99	13.80	42	40	Error field threshold scaling in H mode	XP-1032
						Impact of rotation on turbulence and energy and momentum transport	XP-936
9/16/10	9.85	561.84	14.05	52	40	Effect of Rotation on the L-H Threshold	XP-936
						Characterization of intrinsic torque using torque transients	XP-1042
9/17/10	6.6	568.44	14.21	33	32	NTV behavior at low ion collisionality	XP-1062
						Global MHD and ELM stability vs. edge current	XP-1031
<b>Week's End</b>		<b><u>568.44</u></b>	<b><u>14.21</u></b>				
9/20/10	9.2	577.64	14.44	50	46	Snowflake divertor characterization in NSTX	XP-1045
						Measurements of heat flux profiles for the FY2010 Joint Research Milestone	XP-1043
9/21/10	11.49	589.13	14.73	64	61	Global MHD and ELM stability vs edge current	XP-1031
						ELM/Turbulence	XP-1069
						Synergistic effects between 3D fields and vertical jogs in ELM pacing	XP-1025
9/22/10	8.53	597.66	14.94	46	42	Development of Long-Pulse Enhanced Pedestal H-mode	XP-1064
						Impact of Outer Squareness on High-Kappa	XP-1058
9/23/10	10.24	607.9	15.20	56	53	Characterization of GAE modes and their effect on electron thermal transport	XP-1013
						H-mode TAE/GAE avalanches	XP-1011
9/24/10	9.47	617.37	15.43	53	51	Measurements of heat flux profiles for the FY2010 Joint Research Milestone	XP-1043

# FY10 NSTX RUN LOG

Determination of weak  
RWM stability rotation  
profiles

XP-1020

Week's End

617.37

15.43

Totals

617.37

15.43

3145

2941

Run Hours

Run Weeks

Attempts

Plasmas