

Planning for FY'99 Experiments



Planning for six weeks of experiments from Aug 2 through Sep 30

- assume 4 run days / week \times 10 hours operation / run day

Program ... focused on initial testing of

- basic properties of the Ohmic plasma, *(3 weeks)*
- HHFW launching and plasma heating, and *(1.5 weeks)*
- CHI current formation *(1.5 weeks)*

Need XPs for physics studies in these first 6 run-weeks

- characterize operation and limits for future experimental planning;
- exercise diagnostics in coordinated way;
- new ST physics for invited and contributed APS presentations

Scientific Scope and Key Diagnostics for Aug-Sep 99



Scientific Scope	Key Diagnostics and Tools
ET1: Ohmic Optimization	
Establish plasma operational control	Core interferometer Magnetics loops Fast imaging
Determine volt-second consumption	
Establish baseline plasmas with large I_p and substantial pulse length	
ET2: HHFW	
Demonstrate control	Fixed probes Reflectometer
Characterize antenna electrical properties	
Condition antenna	
ET3: CHI	
Investigate CHI current penetration and toroidal current formation	Fast visible imaging Infrared imaging Single-null configuration

Source: "The Scientific Scope of NSTX Phase-I Experimental Runs" Martin Peng (Draft, April 15, 1999)

Boundary Conditions for Experiment Planning



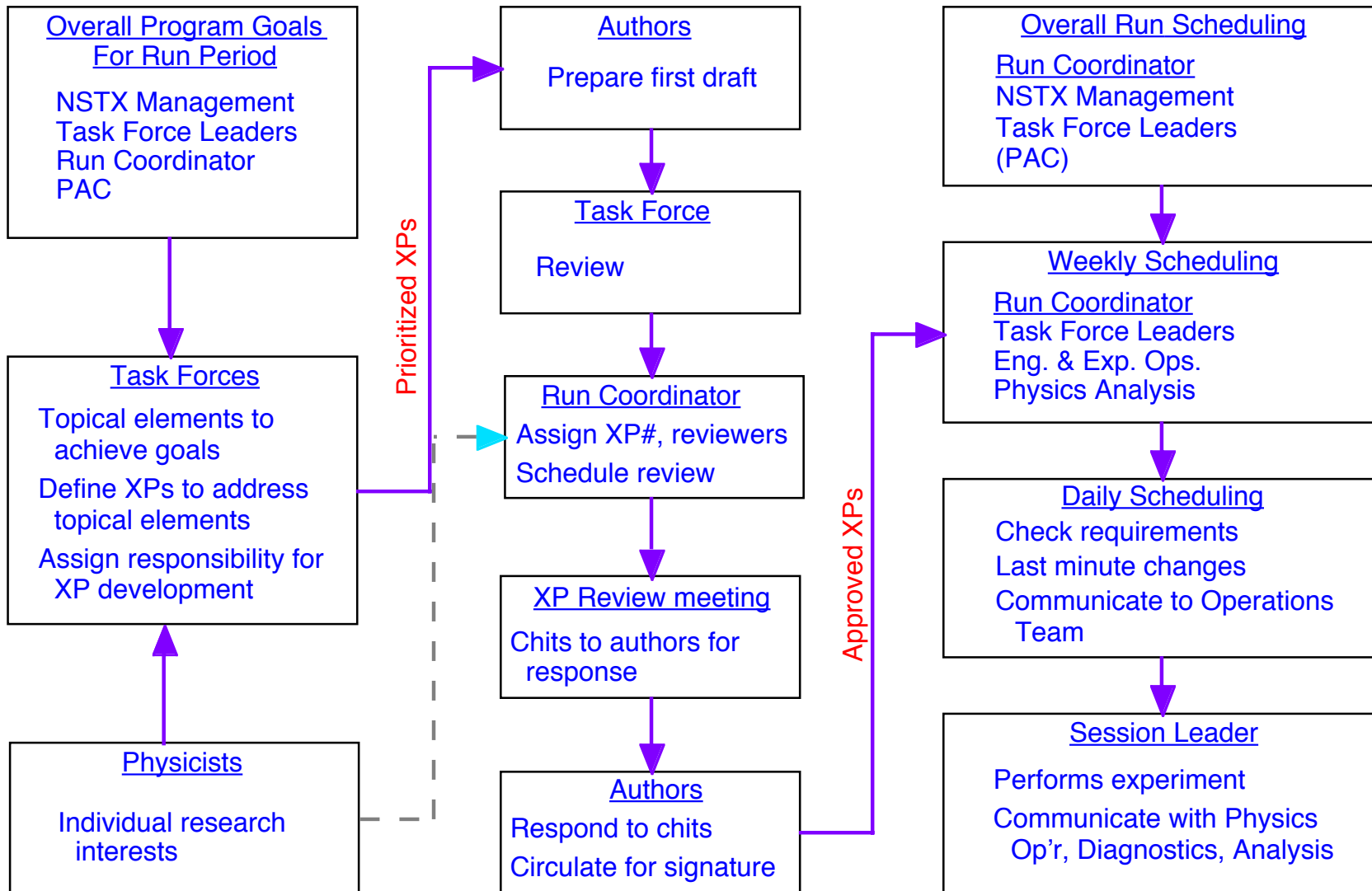
By August 2:

- machine will have been pumped down, undergone some bakeout and GDC
- coils tested and energized
- magnetic diagnostics checked out
- XMPs which are prerequisites to plasma operation should have been performed

XMPs requiring tokamak plasmas (i.e. TF and plasma current present) will be conducted as early as possible in the August - September run period, interleaved with experimental operation as appropriate

Diagnostic commissioning, calibration and validation will also have to take place through the run period.

Generation, Approval, Execution of XPs



Preparation of Experimental Proposals



For this run period, plan on each XP covering 2 – 3 days of operation:

- ET1 – 4 XPs
- ET2, ET3 – 2 XPs each

Timetable for preparation

- Suggested titles and scopes by TG leaders today
- Discussion in Task Groups, assignment of responsibility, design and drafting in May
- Reviews starting in June (at NSTX Physics Meetings)
- Approval by mid July (before Snowmass meeting)

XP template available at <http://NSTX.pppl.gov/nstx/Physics/>

- Word 5.1 or PDF files