NCSX
Physics Strategy Overview

M. Zarnstorff
PPPL

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Overall Milestones

- PAC meeting - Aug. 1
  - PAC issues
  - FESAC issue
- PVR - December
  - Including FESAC issue
- CDR - March

PAC Comments (June 1999)

1) Critical next task for PVR is to develop & determine device flexibility
2) Need to clarify achievable physics program and required capabilities (pulse length, field strength, heating power)

In addition:

- Confinement enhancement methods need to be explored and designed. Current indication is that 6MW is marginal to achieve β=4%
- Start development of a strategy to obtain good flux surfaces
- The design β=4% is marginal. Explore ideas for configurations with higher stability limits.
- Plasma access requirements should get some attention

FESAC PoP Evaluation (August 1999)

The design "must exhibit robustness of the equilibrium configuration throughout the plasma evolution."

Physics Plan

Present phase: Configuration development
Tool development

- Milestone: Improved Plasma Configuration ~ June 1

Next phase: Coil design
  – Without generating islands
  – Flexibility
Physics assessment
  – Flexibility, startup, robustness
  – Transport adequacy, sizing
Configuration decisions

- Milestone: Improved Experiment Configuration ~ Sept. 1

Summary

- We (still) have a lot to do before the PVR !
  - Improved configurations and coils
  - Enhanced confinement
  - Flexibility
  - Good surface quality throughout evolution

- We need to focus on our main issues, to ensure completion