CDR Plan

1. Develop the conceptual design and project plans.
2. Resolve outstanding issues

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Princeton Plasma Physics Laboratory
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Goals for a Conceptual Design Review

Assure that:

1
- Requirements are identified.
- Requirements can be satisfied within acceptable envelopes.
- Cost and schedule targets can be met.

2⁻
- Issues from past reviews are satisfactorily resolved. [PVR, PAC]

1
- Plans for completing the design and development, and hardware acquisition, are sound.
- Risks and hazards are identified; have plans for managing them.
- Project organization and management plans (including Integrated Safety Management) are appropriately developed and implemented.

Obtain:

- Recommendations for improving designs or plans.

Emphasize novel or unusual aspects of the design.
(NCSX: modular coils, vacuum vessel)

Plan (1): Develop the Conceptual Design and Project Plans

by Mar. 1:

- Finalize the requirements (physics requirements, tolerances)
- Carry out design and analysis based on new geometry.
  - Capability to meet requirements.
  - Opportunities for design improvement.
- Conduct manufacturing studies in industry.
  - Manufacturing processes, R&D plans, design
  - Cost and schedule
- Develop project plans
  - Design completion, R&D, acquisition, assembly, testing.
- Finalize cost and schedule estimates.

by the CDR (April 16-18)

- Complete documentation, including
  - Design, physics (update for new design), management.

Plan (2): Resolve Outstanding Issues

Coils

- Close the gap between physics and engineering
  - Target localized problems with improved COILOPT. (MCZ)
  - Apply island healing with improved PIES. (AHR)
  - If necessary, look at: tolerating higher NBI losses, relying more on RF, flexibility of the current engineering design.

Outstanding PVR issues

- Diagnostics: derive requirements from research goals, integrate with design. (DWJ)
- Plasma-facing components: set requirements via boundary physics analysis plan (PKM).
- Magnetic surface quality: evaluate a range of equilibria, calibrate tolerance studies, finite-build coils (AHR).