

CDR Preparation Plan

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CDR Preparations

- CDR scheduled for week of April 15, 2002
 - Driven by budget cycle considerations
- Milestones for work planning were developed by “working backwards” from CDR
- Work plans for FY02 presently being developed by WBS mgrs
 - Resources are tight (effectively \$400K less than last year)
 - Focus is CDR, plans will be front-end loaded
 - Need to limit scope to only activities required for a successful CDR

Milestones for work planning

Milestones	Finish
Reference coil set established for conceptual design	31-Oct-01
Scopes of work and engineering budgets finalized for FY02. Work plans in place through CDR.	8-Nov-01
Start manufacturing studies of modular coils and vacuum vessel	15-Nov-01
General (WBS Level 1) requirements finalized for conceptual design	21-Nov-01
Power supply and cooling requirements established for reference scenario	5-Dec-01
Port geometries and port allocations defined	12-Dec-01
Divertor heat loads defined	12-Dec-01
Power supply and cooling requirements established for trim coils	21-Dec-01
NEPA planning form submitted to NEPA Compliance Mgr (Levine)	21-Dec-01
Technical data required to develop conceptual design in place	21-Dec-01
Complete manufacturing studies of modular coils and vacuum vessel	31-Jan-02
NEPA CX package submitted to DOE	31-Jan-02
All project plans completed	15-Feb-02
Complete all technical work for CDR. Start CDR preparations.	15-Feb-02
Cost and schedule estimates finalized	1-Mar-02
Draft CDR documentation completed	15-Mar-02
CDR documentation issued	22-Mar-02
Draft presentations complete	29-Mar-02
Initial dry runs complete	5-Apr-02
Ready for NCSX CDR	12-Apr-02
DOE CX determination complete	12-Apr-02

Near term activities

- Coordination meetings
 - Meetings being held with WBS managers
 - Finalize WBS Dictionary (what is included in each WBS)
 - Review requirements
 - Finalize scope of work for CDR, work plans, and resources (budgets)
 - Each WBS manager will have his own job number in FY02 **NEW!!**
- General requirements are being formally reviewed
 - Comments will be collected and dispositioned tomorrow
 - Resolution required ASAP to proceed with development of reference scenarios starting November 1
- Plan to develop a “buildable” stellarator core by October 31

Plan for developing a “buildable” design

1. Define a winding surface that is [1] a smooth approximation to Strickler’s optimized surface [2] has adequate stand-off from the VV and [3] has a smooth offset surface where the integral shell will be located
October 17
2. Re-optimize the modular coils on this fixed winding surface with CoilOpt (and the merged optimizer?)
October 22
3. Manually adjust the winding path on the winding surface to satisfy “buildability” requirements (coil-to-coil separation, minimum radius of curvature)
October 25
4. Re-optimize coil currents using StellOpt
October 29
5. Verify “buildability” in Pro/E
October 31

Adopt as the reference design for the CDR

Continue investigation of improved coil configurations in parallel