

NCSX WBS-1

- **Near Term Schedule**
- **Near Term Plans**
- **Issues**

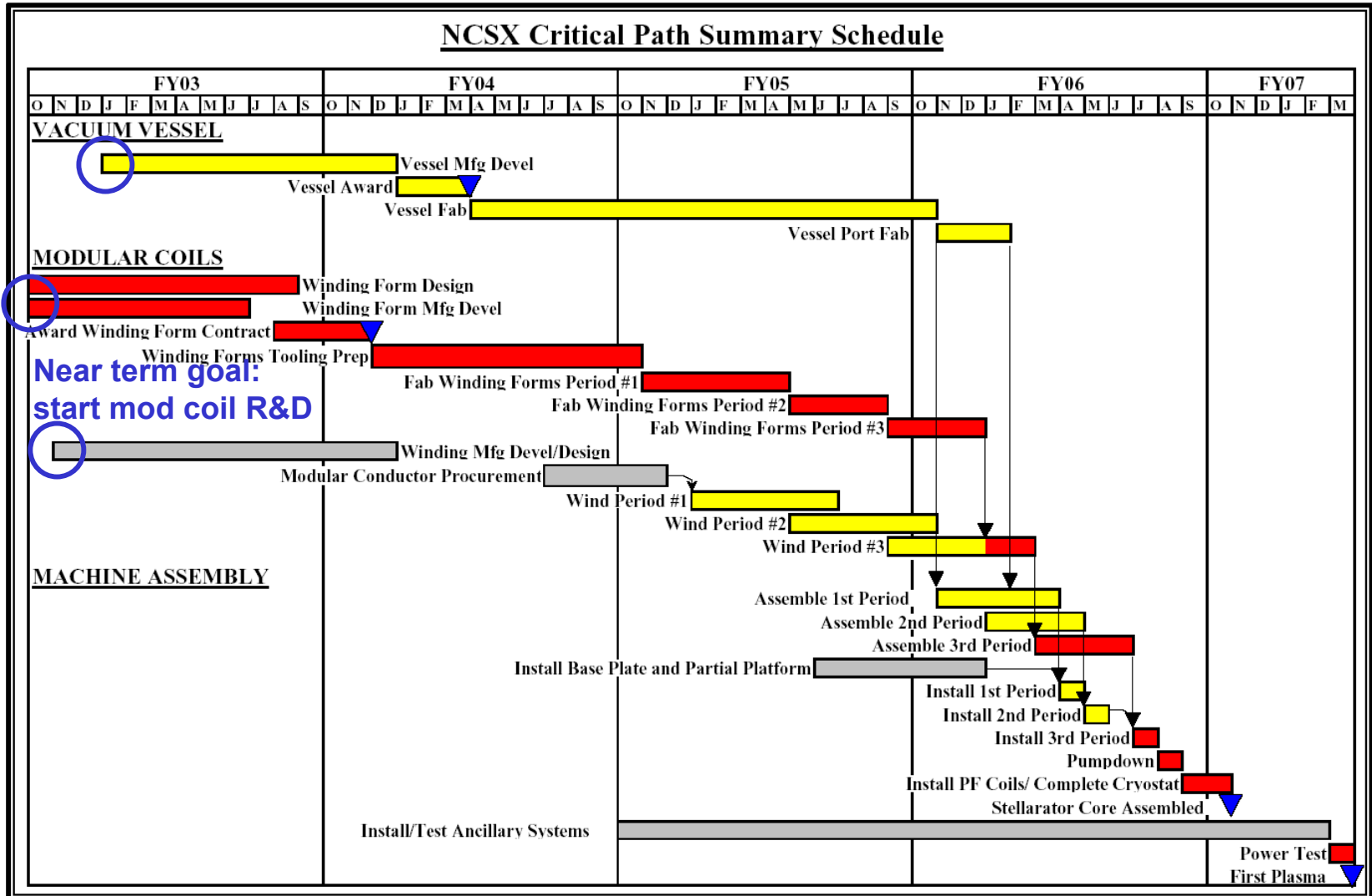
Group meetings to last one hour max

NCSX WBS-1 Engineering Meeting

June 19, 2002

Schedule

Modular coils and vacuum vessel are on critical path



Near Term Schedule – WBS 1

- **Major goals prior to October 1:**
 - **Develop next iteration of modular coil design**
 - **New coil set (M45H and beyond i.e. m45_26aP)**
 - **Improved winding form geometry (variable Tee, shell thick.)**
 - **Add winding form details (bolts, shims, insulating spacers,etc.)**
 - **Establish coil protection scope**
 - **Get manufacturing R&D of winding forms started**
 - **Statement of work**
 - **Revised spec and drawings**
 - **Bid and award cycle starts**
 - **Develop plans for modular coil winding R&D**
 - **Tweak VV/PF/TF designs as required to match new mod coil set, improve structural arrangement, etc.**
 - **Prepare all work packages for FY2003**

Near Term Schedule – WBS 1

Major goals for FY 2003:

- Complete winding form R&D
- Complete winding, potting studies prior to prototype winding and build winding tooling
- Complete modular coil design
- Finalize geometry, specs. and begin vacuum vessel R&D
- Develop all interfaces between components
- Develop all “B” specs (System req. documents)

Task Plans

- **Tasks will evolve as follows:**
 - **Task list identifies potential tasks**
 - **Planning package scopes task and schedule, budgets effort**
 - **Work Package prepared just before task begins, verifies scope, budget and schedule**
- **Task list has been prepared for this summer**
- **Need to prepare planning, work packages**

Task Plans

WBS	Task	Lead	Support
11	Modify PFC boundary/limits to accommodate plasma, divertor, RF launchers, etc	MJC, BEN	Peter Mio, Majeski
12	Develop "B" spec (SRD) for VV	Paul G	BEN
12	Update draft VV specification	Paul G	
14	Develop "B" spec (SRD) for modular coils	DEW	BEN
14	Perform systematic coil tolerance study	Art	BEN, MJC
14	Re-design modular coil cooling system	HM	
14	Define shell joints, bolts, shims, insulators	Fred	HM, designer
14	shell geometry mods	DEW	MJC
14	Update draft mod coil specification	Phil	
14	Winding R&D	UT	JC
19	Develop scope and concept for coil protection system	Hatcher	Art, BEN, Takahashi
19	re-draft design criteria for struct, coils, etc., include existing data, identify holes in data	Zatz	
19	Stereolithography model		
19	migrate to new version of Pro-E		
19	map cost, other documents to new WBS structure		

Issues - General

- **Need common scheduling software, would like to propose MS project, since we already have it.**
- **Need common formats for work plans, specs, design memos, etc. Should be topic for separate meeting.**
- **Pro-E models are getting huge and cumbersome**
 - **Working on single models i.e. vacuum vessel, shell, tf coils, is probably not a problem.**
 - **Those who work on the complete machine assy and design integration requiring multiple module need to explore different operating systems (Windows XP), new versions of proe (64 bit applications when available), and continue to explore techniques to simplify model size.**

Issues – Mod coils

- **Structure needs update to locally increase shell thickness, vary Tee width, etc.**
- **Need to develop mechanical / thermal / fatigue properties for mod coils as soon as possible**
 - **UT winding oblong coil from prototype conductor**
 - **BWXT cannot vacuum impregnate, as planned, should be transferred to PPPL?**
 - **Test plans, property evaluations need to be coordinated with design criteria needs**

Issues - Other

- **TF coils and shell have an interference in the area of the NB**
- **RF antenna and vacuum vessel need to be reviewed to determine if the vessel can be enlarged in the oblate section. Areas of concern are antenna fit up and if the vessel is increased can we get the coils over the vessel still**
- **PF5 may need to be moved and the LN2 header for the mod coils interferes with the cryostat.**

Summary

- **We plan to have a new modular coil configuration by mid-August, if we receive the new coil geometry by mid-July**
- **We need to embellish existing design with details and re-write coil spec, coil SOW in same time frame**
- **Near term work is identified**
- **Planning must continue for consistent resource loading**