NCSX Monthly Progress Assessment

Description:				RLM:	Initials	Period:
Stellarator CoreDesign and Procurement				**Phil Heitzenroeder**		**Oct-2007**

Scope (jobs):	Job Manager	Initials	Scope (jobs):	Job Manager	Initials
Conventional Coils WBS 13	Mike Kalish		Modular Coils Jobs 1416/1421/1429/1431	Dave Williamson	
Coil Services WBS 16	Paul Goranson		Coil Structures & Base Support Structure WBS 15	Fred Dahlgren	
Cryostat Job 1701/1751	Geoff Gettelfinger		Assembly Specs & Dwgs Job 1806	Mike Cole	
Assy tooling & constructability Job 1803	Tom Brown		Systems Analysis Job 8204	Art Brooks	
Dimensional Control Job 8205	Bob Ellis		Systems Engineering & Support Job 8202	Wayne Reiersen	

Highlights and Progress:

A successful Construction Feasibility Review was held on 10/31-11/1/07. TF 5 was released for shipment on 11/16, and TF 6 is expected to be released by the end of the month. TF 7 winding is underway. A number of trim coil design options were studied in conjunction with the Construction review which demonstrated their effectiveness. A peer review of the trim coils was held on 11/6. The feedback from this will be factored into the activities going forward, including consideration of (3) midplane additions at the C-C location. A peer review on the the modular coil chill plate/lead area, which was the cause of last month's megger test failure, was held on 11/12. The group recommended that the MC's be re-tested with the chill plate grounded; to date, two were re-tested successfully. A successful FDR was held for the welded inner leg interfaces on 11/27. Mark Smith has started to work with Tom Brown on Title III issues and withi Art Brooks on checking of his dimensional analyses.

Issues (not currently impacting technical, cost, or schedule but being watcched).

During the MC chill plate/lead review, it was noted that a protective cover needs to be provided in the lead area - this needs to be addressed, and it also has to be determined if active cooling of the lead area is needed (originally, the chill plate cooling line connected to the lead jumper). A chit from the construction review questioned the use of aluminum for the TF/PF structures due to problems with loosening up experienced on C-Mod. This issue was carefully reviewed by F.Dahlgren; he feels that the high thermal conductivity of the Al causes it to cool down first, possibly overstressing the aluminum hardware. As a result, the material is being changed back to SS. The FDR is expected to still be held on 7 Dec, as scheduled. Interference between the cladding was discovered during B1 and C1 fitup trials. It was also found that the pucks in the welded interface design are, in some cases, located over the old alignment spherical seats and extra bolt holes.

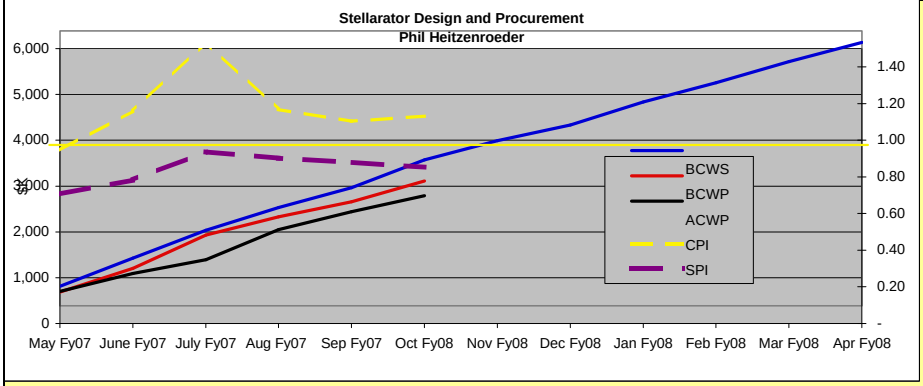
Problems and work around plans :

Surplus SS plate of the right thickness and in adequate quantity has been identified in the scrap yard for possible use in the coil support structures. It is being tested for alloy verification, and if confirmed OK, weld permeability tests will be made using recommended low mu weld wire. Engineering and drafting shortages continue to be an issue and are being addressed - a new contract designer started on 11/20 and a new ME is expected to start in January. An engineering analyst is being scheduled for an on-site interview as a follow-up to a phone interview. . To resolve the issue with the pucks, the ANSYS runs were made without these pucks and found to have a minimal impact on stresses, consequently, these pucks will be deleted.

Schedule (Total Float <1 in RED)

Milestones (6 month look ahead)	Job	Job Mgr	Baseline plan	Current Forecast	DOE Commitment	Level
FDR prep outboard shims	1421	DW	18-Jul-07	29JUN07A		3
Coils Support Structure - PDR	1501	FD	20-Jul-07	20JUL07A		3
**** DELIVER TF COILS FOR FPA #1 ASSY ****	**1361**	**MK**	**28-Sep-07**	**18Oct 07 A**	**Dec-07**	**2**
Dimensional control plans for station 2	**8205**	**BE**	**31-Aug-07**	**13-Nov-07**		**3**
Fab, Test & Deliver Coil #6	1361	MK	23-Nov-07	26-Nov-07		3
Station 2 Assembly Drawings	**1806**	**MC**	**11-Sep-07**	**27-Nov-07**		**3**
AB/BC/AA inboard interface - FDR	**1421**	**DW**	**4-Sep-07**	**27NOV07***	**Nov-07**	**2**
Dimensional control plans for station 3	8205	BE	15-Oct-07	30-Nov-07		3
Coil Support Structures - FDR	1501	FD	21-Sep-07	7-Dec-07		3
Station 2 Assembly Specification	**1806**	**MC**	**11-Sep-07**	11-Dec-07		**3**
Check and promote top-level models/drawings	1416	DW	21-Nov-07	7-Jan-08		3
Mod Coil C-C Joint - FDR	1421	DW	7-Jan-08	7-Jan-08		3
Prepare EM and structural analysis of leads	1416	DW	6-Nov-07	31-Jan-08		3
PF Coils - FDR	1302	MK	24-Mar-08	5-Feb-08		3
Prepare Type-ABC closeout FDR	1416	DW	14-Jan-08	6-Mar-08		3
Base support - PDR	1702	FD	26-Nov-07	6-Mar-08		3
PF Coils Awarded	**1352**	**MK**	**27-May-08**	**8-Apr-08**	**Sep-08**	**2**

Cost and schedule Performance



	From May 1,2007	Current Month
BCWS =	$3,188	$608
BCWP =	$2,722	$453
ACWP =	$2,405	$349
CV =	$317	
SV =	-$466	
CPI =	1.13	1.30
SPI =	0.85	0.75
BAC =	$56,601	
EAC =	$56,207	
Projected cost variance =		

EAC Variance Explanation

Most of the EAC is due to A. Brooks' work on the trim coils being charged to CC8204. All future trim coil work Art performs will be charged to the trim coil CC. The second cause of EAC variance is due to the coil structures job, which is changing material back to SS. We expect to use available SS, which might recover some of the cost overages.

Analysis

Cost Variance (Cause, Impact, and Corrective Action) (>5% and >$50k)

Schedule Variance (Cause, Impact, and Corrective Action) (>5% and >$50k)

The base support structure is behind schedule due to F. Dahlgren and J. Rushinski being overloaded by coil structures. The FDR for the structures is scheduled for Dec. 7, after which they can concentrate on the base structure. With the expected passage of the welded coil interface FDR next week, improvement in the SPI in this area is expected. The specs for the

Changes/Additions to the risk registry

Description	Likelihood of Occurrence	Cost and schedule impact
(need to review this yet)		