NCSX Monthly Progress Assessment

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

Three successful reviews were completed this month: The Station 3 Lift Fixture, Laser Screens & Brackets FDR on 12/3; a FDR for the Welded Inner Leg Interfaces for Modular Coils AA, AB, BC on 11/27. and a PDR for the PF coils on 12/14. TF 5 & 6 will be delivered during the week of Dec. 17, TF 7 was VPI'd on 12/9, and winding of TF 8 is nearing completion . Drawings for the PF/TF structures were completed, based on SS; also the surplus SS plate which is available in PPPL's storage area was confirmed to be 304L SS, and weld tests meeting mu<1.02 were performed. . Metrology equipment issues have been resolved and work is proceeding on three of the last four modular coils. Metrology was completed on coils B5 and C6 and ground wrap insulation is now being applied. Installation of the cladding was completed on B6 and the installation of the inner ground wrap insulation is now underway. Good progress was made on the bolted interface stability tests at both ORNL and PPPL. The Field Period Assembly (FPA) Manufacturing/Assembly, Inspection, Test and Quality Assurance Plan (NCSX-MIT/QA-185-01-02) has been signed off, and the Sta. 2 dimensional control plan is in review. A new engineer (Srinivas Arasawala) has been hired and will begin work with Tom Brown i

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

Welded interface template checks on actual castings indicate that a few shim detail modifications are required. These are being made in parallel with changes to increase stress margins; AA and AB shim drawings are scheduled to be released by 12/14; the BC drawings will be released in late January (well in front of their late March need date). The C-C FDR is currently scheduled for January 9, but has ~400 days of float, so it may be delayed if resources are needed by higher prioroty items. Resurces for meeting future review dates require careful monitoring, especially with the increasing overlap of ITER tasks. We are considering supplementing PPPL staff with contract engineers and designers or by outsourcing to other labs for the interim period until there is a roll-off of personnel on NCSX. .

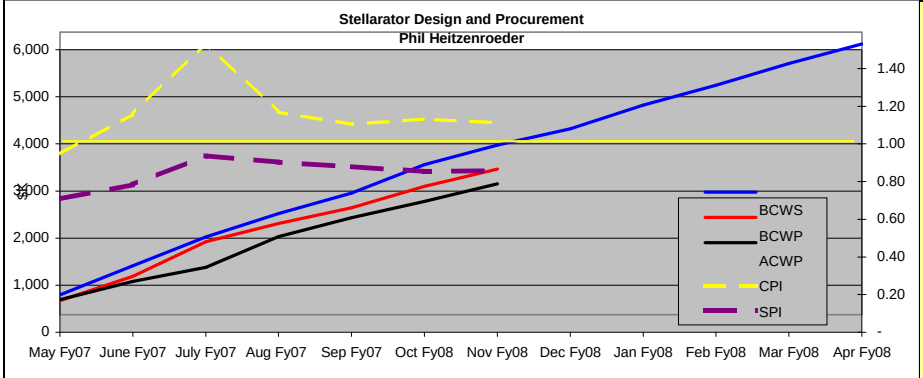
Problems and work around plans :

Interference at the base of the windings was found between B1 and C1 and is being resolved by modification of the cladding and grinding of the casting at the base. The assembly models, unfortunately, did not reflect the cladding overlap at the base of the T. This is expected to be a common condition on the B-C interfaces. These interferences are not an issue on A-A; on A-B there is a small area that is being fixed along with lthe B-C fixes. No problems are expected on the C-C. The overall "hit" is expected to be ~15 weeks of additional work, but not on the critical path. . Fred Dahlgren's hard drive failed, which resulted in the loss of his ANSYS model for the coil structures. Unfortunately this was a secondary drive, and was not backed up. The hard drive was sent out for data recovery, and in parallel he is developing a new model. This is likely to delay the FDR by ~1-2 wks.

Schedule

Milestones (near term look ahead)	Job	Job Mgr	Baseline plan	Current Forecast	DOE Commitment	Float (work days)
AB/BC/AA inboard interface - FDR -(task INTRF-055	1421	DW	4-Sep-07	27NOV07A	Nov-07	
Station 2 Assembly Drawings -(task 1803-205	1806	MC	11-Sep-07	7-Dec-07		-21
Station 2 Assembly Specification -(task 1803-201	1806	MC	11-Sep-07	11-Dec-07		-23
PF Coils - PDR -(task 1302-225	1302	MK	11-Dec-07	14-Dec-07		57
Fab, Test & Deliver Coil #6 -(task 1361C-106	1361	MK	23-Nov-07	14-Dec-07		389
Coil Support Structures - FDR -(task 1501-541	1501	FD	21-Sep-07	14-Dec-07		106
Dimensional control plans for station 2 -(task METFY07R1	8205	BE	31-Aug-07	21-Dec-07		-31
Check and promote top-level models/drawings -(task 1416-506	1416	DW	21-Nov-07	7-Jan-08		26
Dimensional control plans for station 3 -(task METDCP-3	8205	BE	15-Oct-07	11-Jan-08		6
PF Coils - FDR -(task 1302-270	1302	MK	24-Mar-08	5-Feb-08		54
Prepare Type-ABC closeout FDR -(task 1416-605	1416	DW	14-Jan-08	30-Jan-08		24
Prepare EM and structural analysis of leads -(task 1416-601	1416	DW	6-Nov-07	31-Jan-08		1,169
Mod Coil C-C Joint - FDR -(task 1421-3144	1421	DW	7-Jan-08	4-Feb-08		429
Base support - PDR -(task 1702-515	1702	FD	26-Nov-07	7-Feb-08		32
Base Support Structure FDR -(task 1702-525M	**1702**	**FD**	**4-Feb-08**	**13-Mar-08**	**1-May-08**	**32**
PF Coils Awarded -(task 141-036	**1352**	**MK**	**27-May-08**	**1-Apr-08**	**Sep-08**	**54**
LN2 manifolds&piping- PDR -(task 191-002	1601	PG	2-Apr-08	2-Apr-08		96
** Trim Coil PDR ** -(task TRIM-101	1354	MK		16-Apr-08		0
** Trim Coil + Structure FDR ** -(task TRIM-221	1354	MK		3-Jun-08		0

Cost and schedule Performance



	From May 1,2007	Current Month
BCWS =	$3,601	$414
BCWP =	$3,091	$369
ACWP =	$2,776	$372
CV =	$315	
SV =	-$510	
CPI =	1.11	0.99
SPI =	0.86	0.89
BAC =	$56,601	
EAC =	$58,681	
Projected cost variance =		

EAC Variance Explanation

Analysis

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

Job 1421 (Mod Coil Interface) is currently underspent by $170K. Some of this will be used to revise welded interface shims to fit as built conditions and for margin improvement changes.

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

The SPI for the base support structure is low due to resources being used yet to complete the TF/PF structures (see above). The SPI is expected to improve when these structures are completed late in December.

Changes/Additions to the risk registry

Description	Likelihood of Occurrence	Cost and schedule impact
Risk 4 (Modular coil interface design needs to change significantly…) can be retired, since a successful FDR on the welded interfaces was held on 11/29.		