

National Compact Stellerator QPPR/Mini Assessment Review

DATE: February 22, 2006

LOCATION: Department of Energy, Germantown, Maryland

COMMITTEE: Three DOE participants—Jeff Hoy, Bruce Strauss, Kin Chao

PURPOSE OF REVIEW: An Interim Assessment Review as a part of the NCSX QPPR was conducted to solicit input from SC Program personnel, independent to OFES on the status and progress of the project.

STATUS OF PROJECT:

▪ CD-1 (Alternative Selection):	Planned: Aug 02	Actual: Nov 02
▪ CD-2 (Performance Baseline):	Planned: Jan 04	Actual: Feb 04
▪ CD-3 (Start Construction):	Planned: Oct 04	Actual: Sep 04
▪ CD-4 (Project Completion):	Baseline: Jul 09	Forecast: Jul 09
▪ TEC:	\$ 92.4M	
▪ Percent Complete:	Planned: 54.2%	Actual 51.6%
▪ Contingency:	\$ 9.6M or 23.9% of work remaining & 5mths float	

Currently, the project has two Modular Coil Winding Forms (MCWFs) delivered, thirteen castings out of eighteen poured, and the fabrication of the C1 MCWF at Princeton Plasma Physics Laboratory (PPPL) is scheduled to be complete in about a month. Additionally, the C2 coil is in the winding process and vacuum vessel sub-assemblies are progressing well. However, MCWF machining is taking much longer than expected, and since MCWF deliveries are on the critical path, there is an increased risk of project delay and cost overruns due to MCWF machining delays.

PPPL has worked with MCWF vendor to develop a revised plan for the delivery of MCWFs. Also, PPPL is actively pursuing cost saving opportunities through outsourcing the fabrication of TF and PF coils. By implementing parallel work processes during the vacuum vessel preparation phase, the project is planning to be back to its original schedule by May 08. Currently, the project still has 5 months of schedule float and there is potential for additional measures (overtime, more parallel work, additional shifts) that will provide additional schedule float if needed. At this time, it is assumed that no re-baselining will be required.

OBSERVATIONS AND CONCERNS:

- The continuing rate of contingency drawdown is of concern, and there is a potential for cost overruns if planned cost savings can't be realized.
- Independent observers noted that initial learning curve assumptions were very optimistic, and based on their own experiences, it is not atypical to see actual manufacturing times taking longer than planned.
- The reviewers asked what the basis of MCWF winding fabrication productivity assumptions were and if there were really opportunities for significant improvement.
- The site overhead rates are very sensitive to amount of work ongoing at PPPL. The project should be aware of the cost impact the NCSX project due to overhead rate fluctuations.

RECOMMENDATIONS:

- Contact Mike Zisman of LBNL at 510-486-5765 on lessons learned regarding procurements from China.
- Provide a critical assessment of project status at the May Lehman review.