NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Tuesday, June 21, 2005 at 11:15AM are as follows:

Attendees: DOE-PSO: J. Makiel, G. Pitonak

DOE HQ: Kin Chao, Gene Nardella, Sam Barish

ORNL: J. Lyon

PPPL: J. Levine, R. Strykowsky, F. Malinowsky, R. Templon, H. Neilson, W. Reierson, R. Hawryluk

1. DOE News (Sam)

Jeff Salmon (Dr. Orbach's Chief of Staff) is working with Bruce Carnes office (Deputy Secretary's office) to get the proposed new baseline approved.

A briefing to OFES (N. A. Davies) is scheduled later this week (11AM Friday June 24th) to discuss the impact from shipping delays of the first MCWF from EIO or, more specifically, the EIO sub contractor Major Tool and Machine. The briefing should include the following:

- ✓ Vendor status of the MCWF;
- ✓ Vendor's remedial actions;
- ✓ Impacting cost and schedule risk analysis to the NCSX project;
- ✓ Performance metrics for the month of May.

More technical discussion provided in paragraph 4 below.

2. Safety Management (Jerry)

An Activity Certification Committee (ACC) successfully completed their review of the Coil Test Facility.

3. Next Lehman Review (Kin/Hutch)

A date for the next Lehman review is tentatively schedule for the November timeframe.

4. Project technical progress (Hutch)

a) The machining of the C-1 casting continues to progress but is progressing slower than expected. The revised schedule from the vendor now indicates a 'best' date at July 31st. Contributing factors of the delay, and remedial actions performed by the vendor include:

- ✓ Unusual geometry of the casting is resulting in new and complex machining requirements;
- ✓ Development of new machining techniques and lessons learned should benefit the remaining castings;
- ✓ The prototype casting is being used to help develop a more efficient machining process;
- ✓ Vendor is working 2 shifts at 10 to 12 hours per shift, 6 days per week. Sunday may also be included;
- ✓ The Vendor has the ability to perform concurrent machining of the other castings as they are received from the foundry;
- ✓ High quality standards continue to be paramount. Quality assurance support from EIO and DCMA will continue to benefit the vendor and project;
- ✓ The 4th quarter Joule milestone (winding of the 1st MCWF) will be missed. The NCSX Project Team should provide OFES with a projected completion date.

b) The C-2 casting process went well and weld upgrades are at or near completion. The lessons learned from the C-1 casting process have reduced the amount of casting repairs. The C-2 casting will be shipped to Major Tool and Machine later this week for machining.

c) The casting pour for the A-1 casting has successfully occurred.

d) The casting pour for the C-3 casting has successfully occurred. Four total castings have now been poured.

e) The "B" pattern continues to be in the development phase.

f) The VVSA panel forming continues. 14 of the 60 panels have been formed. Welding of the panels is anticipated to begin later this week. Although this VVSA is not on the critical path, the work is proceeding a little behind schedule due to relatively small developmental issues. However, there are no 'show stopping' issues. The delay in work will be reflected in the cost/schedule variances discussed in paragraph 8 "Project Performance" below.

g) Fabrication on one of the two 60-degree weld fixtures is nearing completion to support welding of the VVSA panels discussed in paragraph (f) above. The second fixture continues to be fabricated;

h) The TRC has successfully completed epoxy impregnation using the new Autoclave facility. Testing of the TRC coil will begin shortly, however, cold testing in the new Coil Test facility must be postponed to the week of July 4th because the Coil Test facility can only operate when the NSTX experiment is operational, and the NSTX experiment will begin a maintenance outage next week.

i) Final Design Reviews continue for the modular coils and VVSA component parts (cladding, chill plates, clamps, cooing tubes, etc.) in support of winding the C-1 coil;

j) As reported at the last IPT, the construction of the TF coils will be performed in-house. The component parts are being procured for this effort and the TF coil winding facility continues to be constructed adjacent to the MC winding facility;

k) Members of the NCSX Team will visit MetalTek and Major Tool and Machine next week to oversee progress and discuss technical issues and schedule;

l) The NCSX Team continues to investigate a method to check the tolerances of completed coils using high precision magnetic measurements. A trial test of the new measuring system will be performed on the TRC later this month.

5. Procurement (Rod/Hutch)

a) The NCSX Project Team continues to closely monitor the current major procurements for the MCWFs and VVSA;

b) Continued small procurements are underway to support component parts. Critical path components are the highest priority;

c) PPPL NCSX Project Team and PPPL Procurement continue to meet to plan the upcoming procurements for the remainder of this fiscal year.

6. Review of critical issues (Hutch/Wayne)

a) As mentioned in previous IPT meetings, current center position control continues to be a critical issue (category II). A plan has been developed to address the dimensional control issues via bench testing of fiberglass strapping and clamp positioning techniques;

b) Delay in the delivery of the first MCWF (C-1) from the vendor has become a critical issue that will cause the project to not meet the 4th quarter Joule milestone. Technical details, and remedial actions, are discussed in Paragraph 4a above.

c) The cost for fabrication modular coil assembly fixture has exceeded engineering estimates. The fixture is used to slide/rotate the finished modular coil over the VVSA field period. Pricing received from outside vendors was $400+K versus $127K that was budgeted. PPPL is investigating if this work can be performed in-house to reduce cost.

7. Planning for the next 6 months (Hutch/Ron)

The 6 month look ahead continues to be similar as stated in previous IPT Meetings as follows:

a) Finish FDRs for the stellarator core systems, place procurements as required by the schedule;

b) Get everything ready (parts, procedures and facility) in preparation of the first (C-1) modular coil;

c) Prepare for the field period assembly and TF coil fabrication;

d) See "Technical Progress" for other planned tasks.

8. Project performance thru Feb (Ron/Greg)

a) SPI=.96 and CPI=.97 as measured against ECP30. There has been no reduction (or draw down) on contingency which remains at $11.6M;

b) At the reported in the last IPT Meeting on May 24, the previous SPI=.97 and CPI=.98. The reduction in SPI is primarily due to MCWF, VVSA, and field period fixture being behind schedule. The reduction in CPI is primarily due to increased costs in the Coil Test facility, modifications to the Coil Winding Facility, fabrication of the TRC, and final design costs for the modular coil.

c) An ECP is being prepared to request release of $800K of contingency to the project that will support items discussed in paragraph 8b above. This is based on the retirement of risks for this work, and the contingency will remain at 25% based on the remaining work.

c) An updated estimate of year end carryover of $1.4M is now anticipated for the NCSX project. Previous estimate in May 24th IPT Meeting was $2.0M.

9. ECP status (Wayne/Ron/Greg)

ECP-030: Approved. ECP30 redistributed the work within the current baseline in anticipation of the re-baseline effort.

ECP-031: Pending. Upon approval of the ESAAB by the Deputy Secretary, ECP31 will establish the new baseline.

ECP-XXX: Anticipated. Release of $800K contingency

10. Planned IPT meetings thru June are as follows:

June 24	Brief OFES (N.A. Davies) on impact of MCWF delay
July 12	Next IPT Meeting