

# NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Tuesday, Oct 17, 2006 at 11:30AM are as follows:

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

DOE HQ: B. Sullivan, K. Chao

ORNL: J. Lyon

PPPL: R. Templon, J. Malsbury, R. Strykowski,  
W. Reiersen

## 1. DOE News (Barry)

- a) No further news about the Continuing Resolution. Although the project has a larger carry over than anticipated, the project still requires a \$200K increment above the 1/12<sup>th</sup> CR increment for Oct and Nov.
- b) An NCSX Quarterly Review has been schedule for October 26<sup>th</sup> at 9:30am. The format is the same as previous reviews: PPPL presents followed by a DOE-only session. The discussion will highlight the re-planning proposal in response to the July 13<sup>th</sup> DOE letter. A draft report will be provided to all on October 24<sup>th</sup>.

## 2. Safety Management (Jeff)

There are no notable safety related issues within the NCSX Project or PPPL-wide.

## 3. SC Project Review (Kin/Jeff)

- a) Background: A letter was sent by Jeff as the FPD to the NCSX Project Team that requested a disposition plan for the recommendations made by the SC Project Review Team during the May 2006 Lehman review. One outstanding recommendation was to evaluate the need for cold testing of the type A and B modular coils.

*Update:* The NCSX Project submitted a two page white paper to Jeff which discusses the purpose of cold testing of a completed modular coil, and why no further testing will be performed. Jeff will send the white paper to the reviewers at the last SC Project Review (May '06) for evaluation. Additional discussion on this topic during the upcoming Dec '06 SC Project Review is anticipated.

- b) The next SC Project Review was scheduled for December 12-13 at PPPL. [Update: soon after adjournment of the IPT meeting, a revised date of December 19-20 has been requested by Kin. The new date is acceptable to the NCSX Project Team and SC-PSO. Awaiting final confirmation from Kin and Barry].
- c) A charge letter will be prepared this week and a draft copy will be provided to Hutch, Kin and Barry [Update: draft charge letter has been emailed, comments are being received].

The Committee members will be:

James Kerby (Fermilab)  
Steve Webster (Fermi Site Office)  
Joe Minervini (MIT)  
Dave Anderson (University of Wisconsin)  
Bruce Strauss (DOE/SC)

#### **4. Project technical progress (Wayne)**

The following provides a brief status on the major components:

##### MC Winding

- a) The C-1 MC: The C-1 is complete;
- b) The C-2 MC: The C-2 is complete;
- c) The C-3 MC: The C-3 is complete;
- d) The C-4 MC: The C-4 is complete;
- e) The C-5 MC: The C-5 was VPI'd;
- f) The A-1 MC: The A-1 being prepared for VPI;
- g) The A-2 MC: The A-2 being wound;
- h) The A-3 MC: The A-3 completed prep and will begin cladding;
- i) The B-1 MC: Received B-1 form and in queue for winding.

## MCWFs

The following is the status of MCWFs in vendor production:

- a) With the recent receipt of the B-1 winding form, one half of the winding forms are now at PPPL. Also, the first “3-pack” of a type A, B and C winding form are in the Project’s possession. With receipt of the B winding form, it also highlights the successful fabrication of all three winding form types by the vendor;
- b) Modular coil winding form production is going well overall at Major Tool and Machine and continues to support the Project’s needs. MTM is not receiving their maximum incentive payments due to minor delays in delivery which prorate the incentive amount. However, these delays do not impact in-house work, and result in a small “savings” in the payment to the vendor.

In summary:

0 in foundry phase  
9 in machining phase  
9 delivered  
18 total

## VVSA

The VVSA effort continues as follows:

- a) VVSA #1 continues with the installation of heating & cooling tubes, and the diagnostic loops;
- b) VVSA #2 completed the ‘best fit’ metrology task and has been removed from the fixture at Prep Station #2;
- c) VVSA #3 has been mounted in the fixture at Prep Station #2 and is undergoing ‘best fit’ metrology measurements;

## TF Coils

- a) The TF Coil contract with Everson Tesla Inc. (ETI) satisfactorily continues. Fabrication of tooling (i.e., the winding fixture), the clean room, taping machine, and brazing are either underway or completed. In addition, the fabrication of the VPI mold has begun and the 1<sup>st</sup> wedge casting will soon be poured;
- b) *Update:* Due to the delay in obtaining wedge-fixture material by ETI, the first two TF coils delivery dates will slip as previously reported. The slip will be recovered upon

delivery of the third TF coil within 2 weeks of the baseline schedule. The TF coils are not a critical path item. Delivery will begin in February.

### Other activities

Design activities continue with the following:

- coil assembly drawings;
- modular coil interface (shims and bladder);
- field period assembly stations.

A peer review on field period assembly was performed last week. The NCSX Project Team solicited international participation from Germany and England as well as domestic colleagues. Many design chits were generated which are now under review. Two notable discussions are the benefits of developmental trials, and the importance of metrology.

### **5. Procurement (Rod)**

- a) Procurement continues to support both major and minor material contracts including EIO/MTM and Everson Tesla Inc as discussed above;
- b) The procurement of a third modular coil winding fixture concluded upon the receipt of the fixture at PPPL two weeks ago;
- c) Procurement of the cladding and chill plates for the 'B'-type modular coils continue to support the project's in-house winding schedule.

### **6. Review of critical issues (Wayne)**

- a) There are no Category I critical issues
- b) Category II critical issue: The final clamps that hold the epoxy impregnated copper conductor pack to the winding form may need some redesign for those clamps that are unable to provide a secure grip due the geometry of the winding pack. Update: PPPL's Larry Dudek is working this issue in-house and is therefore considered a category II critical issue;
- c) Category II critical issue: Readiness for field period assembly. Focus is shifting towards the many tasks that need to be done in preparation of this critical path activity.

## **7. Planning for the next 6 months (Wayne/Ron)**

The focus will continue to be on the receipt of MCWFs, and the winding of modular coils as a critical path activity.

Other planned activities are:

- Continue with VVSA preparation at Prep Station #1 and Prep Station #2;
- Monitor and oversee TF coil vendor fabrication. First TF delivered in February;
- Continue with design support for coil assembly and field period assembly tasks.

## **8. Project performance through July (Ron)**

- a) The project cost performance data thru the end of September: SPI=.98 and CPI=.97. These indices have remained stable in the last 5 months;
- b) The FY06 carryover was \$876K. The carryover amount was more than previously anticipated due to several factors including a beneficial end-of-year G&A rate recalculation, less than anticipated accrual by Everson/Tesla, and a credit on the EIO/MTM cost to date.
- c) As required by the EIO/MTM modular coil winding form contract modification that incentivized vendor payment based on delivery performance, DCAA audited MTM's books and determined that \$97K will be credited to the NCSX Project;
- d) Current contingency remains at ~\$7.9M. However, a \$1.77M cost variance exists. With the cost variance zeroed-out, the effective contingency is currently at ~\$6.1 which calculates to 21.7% free balance contingency.
- e) An ECP proposes a \$1.33M drawdown of contingency. \$953K is attributed for future cost growth, as previously identified to PSO, and \$374K is for retired work. Upon processing the ECP, the contingency will be \$6.55M and the cost variance will be lowered to ~\$1.4M. Therefore, with the cost variance zeroed-out, the effective contingency will be ~\$5.1 or ~17.2% of the work remaining.

## **9. ECP status (Ron)**

The following are current and anticipated Engineering Change Proposals (ECPs) that require DOE approval:

- a) ECP52 has been proposed to re-plan activities in FY07. The ECP will release contingency to support the recent cost estimate growth for the modular coils, first field period assembly and other planned tasks. The ECP would also release contingency to offset the cost growth of accomplished work.

**10. Planned IPT meetings (and other events) are as follows:**

Oct 26<sup>th</sup> ..... NCSX Quarterly Review  
Oct 30<sup>th</sup> ..... NCSX Monthly Watch List Report for Sep/Oct  
Nov 7<sup>th</sup> ..... Next IPT Meeting  
Dec 19-20 ..... Next NCSX SC Project Review (rescheduled)