

# NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Tuesday, Sep 20, 2005 at 11:30AM are as follows:

**Attendees:** DOE-PSO: J. Makiel

DOE HQ: Gene Nardella, K. Chao, S. Barish

ORNL: J. Lyon

PPPL: R. Strykowski, J. Levine, R. Templon, J. Malsbury  
H. Neilson, W. Reiersen, R. Hawryluk, R. Templon

## 1. DOE News (Sam)

There is no new information about the FY06 budget. Speculation indicates that a lengthy Continual Resolution is possible. However, no budgetary guidance is available.

## 2. Safety Management (Jerry)

- a) There have been no recordable injuries in the last month. As reported in the last IPT meeting, there was a previous non-NCSX injury related to general housekeeping issues. PPPL and the NCSX Team continue to address this issue;
- b) The Princeton Site Office (PSO) has reviewed the upcoming critical lifts for the receipt and mounting of the first modular coil winding form;
- c) Don Erbschloe (SC-3) visited PSO and PPPL last week. During his visit there was an NCSX presentation that addressed project management and safety;
- e) As discussed in previous IPT meetings, an Activity Certification Committee (ACC) reviewed the readiness for the Coil Winding Facility which supports the winding of the modular coils and TF coils. All findings by the ACC have been closed-out.

## 3. Next Lehman Review (Kin/Barry/Greg/Hutch)

The next Lehman review is scheduled for November 2-3. At the last IPT meeting, Hutch provided a tentative outline of topics that will be discussed during the review including an updated plan for FY06 and discussion of risk management issues. The outline and agenda continue to be acceptable.

Kin outlined the members on the review team which will be chaired by Steve Meador.

#### 4. Project technical progress (Hutch/Wayne)

##### MCWFs

Seven modular coil winding forms (MCWFs) are in process. The following is an update in status of each casting:

- a) The C-1 casting is expected to ship this month from Major Tool and Machine (MTM). The C-1 casting was previously anticipated to be shipped on September 16<sup>th</sup>. However, some additional difficulties regarding fixture setup for machining of the poloidal break were encountered. The C-1 casting is now complete the machining phase at MTM and will undergo dimensional testing prior to shipment;
- b) The C-2 casting continues in the machining phase with the commencement of 5-axis machining phase. The C-2 casting is progressing much better from lessons learned on the C-1 casting. The progress of machining continues to be roughly twice the pace of the C-1 casting;
- c) The A-1 and C-3 castings have been shipped from the foundry (MetalTek) and are at MTM. There are now three C-type MCWFs, and one A-type MCWF in the machining phase;
- d) The C-4 castings have been poured at MetalTek and are undergoing routine quality assurance testing and weld repairs. There was an issue regarding the availability of weld repair material due to national shipping disruptions within the New Orleans port of entry. However, this problem is not of great concern;
- e) The C-5 and C-6 castings have been poured at MetalTek. This completes the pouring of all C-type castings. The castings await weld repair and radiography prior to shipment to MTM;
- f) The "B" pattern work was completed by Lawton and shipped to MetalTek for mold preparation. The first B-type casting (B-1) will be poured in October;
- g) The A-2 casting is in preparation for the next pour during the week of September 26<sup>th</sup>. The cause of the thin wall condition that occurred with the A-1 casting will be re-examined upon completing the pour of the A-2 casting;

##### VVSA

- a) The VVSA effort continues. The first pair of 60 degree sections are completed and have been welded together to form the 1<sup>st</sup> period. Machining of the holes for the diagnostic ports is underway;

- b) Work on the 2<sup>nd</sup> period also continues. Panel welding for the first 60 degree section is completed and welding of the second 60 degree section is moving forward;
- c) Work on the diagnostic ports is continues with port fabrication and polishing. Odd shaped ports have been subcontracted by MTM to another supplier.

#### Other components and facilities

- a) The Twisted Racetrack Coil (TRC) cold testing in the Coil Test Facility concluded this week. No issues have been noted;
- b) Many of the components discussed in previous IPT Meetings are in the procurement phase and are discussed in the Procurement section below.
- c) Design and specification for insulation on the vacuum vessel continues. Nanogel has been adopted as the baseline insulation material, to satisfy the 150 C bakeout requirement. Also, analysis of cryostat port seal design continues due to possible space constraints where the diagnostic ports pass thru the shell;
- d) A successful FDR for the VV Prep Station occurred earlier this week. The Prep Station consists of a special fixture that will hold and rotated a VV period so components like cooling tubes and diagnostic coils can be attached.

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

- a) All component parts in support of winding the first modular coil (C-1) have either been fabricated in-house or was successfully procured and received. The coil winding team now awaits receipt of the C-1 MCWF;
- b) The procurement of pre-bent cooling tubes which cover the exterior surface of the VV was unsuccessful due to the complex shape of the tubes which had no interest from outside vendors. The NCSX Team, in anticipation of this outcome, will further investigate the use of corrugated tubing that will be formed in-house;
- c) The TF wedge casting plates received only 1 bid which was higher than anticipated. It is believed that the problem arises from material concerns. The NCSX Team is investigating the use of alternate wedge plate casting material;
- d) Receipt of the copper conductor for the TF coils is delayed by the supplier for approximately 6 weeks. However, winding of the TF coil is not on the critical path.

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

- a) Category 1 risk - - the available space inside the cryostat near the midplane is very tight. The vacuum vessel insulation boots further infringe on the available space requiring further boot design. Engineering and design work continue to resolve this issue.

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

Although not explicitly discussed during the meeting, the following tasks continue as follows:

- } Close-out designs for vacuum vessel, C-type modular coil, and TF coil;
- } Continue vendor fabrication activities & begin coil winding;
- } Focus on design work related mostly to the support structures;
- } Re-plan next years scope and resources adjusting for delays experienced this fiscal year regarding the modular coil winding forms.

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

- a) The SPI and CPI as of July are .96 and .97 respectively as reported against the new baseline. Drivers for the variance continue to be the same as discussed in the last IPT Meeting on August 30<sup>th</sup>.
- b) Contingency is 27% based upon remaining work.
- b) An estimated carryover at end of the fiscal year is anticipated to be approximately \$2.0M.

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

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

There are currently no ECPs pending DOE action.

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

- } October 11 at 11:30am - - IPT Call
- } Nov 2-3 - - Next Lehman Review.