

NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Tuesday, May 23, 2006 at 11:30AM are as follows:

Attendees: DOE-PSO: J. Makiel
DOE HQ: B. Sullivan
ORNL: n/a
PPPL: W. Reiersen, R. Templon, H. Neilson, R. Strykowski
J. Levine, J. Malsbury, R. Hawryluk

1. DOE News (Barry)

- a) The SC Project Review (Lehman Review) occurred on May 9-10. The review report has been drafted and will be distributed to the NCSX Project Team for factual accuracy check. [Update: draft report has been provided to the NCSX Project Manager.

2. Safety Management (Jerry)

- a) A PPPL lab-wide safety forum was held last week, followed by breakout sessions to discuss specific safety related tasks;
- b) ISM re-verification is still scheduled for the week of June 12th;
- c) The PPPL Activity Certification Committee (ACC) has performed a review of the Vacuum Vessel Prep Station #1. The ACC provided recommendations to the NCSX Project which are now under review.

3. Lehman Review (Jeff)

As mentioned above, A Lehman review occurred about two weeks ago. One issue that was raised after the close-out review was to conduct a cost/risk analysis to determine the need for cold testing on the A1 & B1 modular coils.

4. Project technical progress (Hutch/Wayne)

The following provide a brief status on the major components:

MC Winding

- a) The C-1 MC: The C-1 is being prepared for cold testing;
- b) The C-2 MC: The C-2 is undergoing VPI;
- c) The C-3 MC: The C-3 in being wound;
- d) The C-4 MC: The C-4 is being wound;
- e) The C-5 MC: Currently in Station #1b for prep work

MCWFs

The following is the status of MCWFs in vendor production:

- a) A-1 will be shipped early next week after the Memorial Day weekend;
- b) A-2 was in the 3-axis machining phase when the Mitsubishi 40 (3-axis machine) experienced a machine breakdown. A-2 is on hold until the machine is repaired. Subsequent MCs requiring 3-axis work have been diverted to another 3-axis machine (Mitsubishi 30) as discussed below. Major Tool is pursuing 3 paths to obtain repair parts. It is anticipated that the machine will be operational in about two weeks. [Update: operations resumed May 26.]
- c) A-3, and A-4 are in the 3-axis phase;
- d) B-1 and B-2 are in the rough machining phase. The machine performing the roughing work (Lucas 49T) also failed causing about a 1 week delay. [Update: operations resumed May 25.]
- e) C-6, A-5, A-6, B-3, B-4, B-5 and B-6 were poured. All casting have now been poured. Two remain in foundry operations.

In summary:

2 in foundry phase
11 in machining phase
5 delivered
18 total

VVSA

The VVSA effort continues as follows:

- a) The 1st segment was found to have out-of-tolerance issues. Physics as well as machine assembly considerations were analyzed and the 1st segment was accepted and received at PPPL. VVSA #1 is now undergoing in-house dimensional verification and VVSA Prep Station #1 is being assembled for the installation of diagnostic loops and heating/cooling tubes;
- b) The 2nd segment fabrication resumed work (on-hold due to tolerance issues noted on VVSA #1). VVSA #2 was found to be acceptable and work continues with completion of vacuum testing. The ports are now being removed;
- c) The 3rd segment continues fabrication with the installation of the ports.

Other components and facilities

- a) Materials to support the Prep Station work are being procured (diagnostic loops, heater tape, heating and cooling tube, etc.).
- b) Design continues to support the ongoing fabrication and procurement efforts. Focus is on procuring parts for the A-type modular coils.

- c) The TF coil procurement was awarded to Everson Telsa Inc located in Nazareth, PA. A “kick-off” meeting was held last week to commence work. The NCSX Project Team shipped a portion of copper conductor to Everson Tesla as well as supplied the CAD drawing data.
- d) The NCSX Project Team recommends that the patterns for each casting type be discarded upon acceptance by PPPL of the first completed MCWF of that type. . The project’s assessment is that the risk that the patterns would be needed to pour another casting after that point is minimal. It is estimated that retaining the molds/patterns may cost \$15K for shipping and storage. However, some concerns were noted due to the consequence of possibly needing the patterns again.

5. Procurement (Rod)

- a) Procurement of the TF coils has been awarded to Everson Tesla Inc. as noted above. The procurement includes the TF wedge supports which were a category II critical issue due to initial cost issues;
- b) Although not discussed during this IPT meeting, the EIO/MTM contract for the modular coils winding forms was successfully modified.

6. Review of critical issues (Hutch/Wayne)

- a) A previous category I Critical Issue was identified regarding the need for an improved connective interface between modular coils along the inboard flange faces. Currently, there are no bolts in this area due to limited accessibility. The engineering team has investigated this concern and has developed a coil interface system that will carry the shear load. This Critical Issue is now a category II.
- b) No new Critical Issues were raised.

7. Planning for the next 6 months

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

Other planned activities are:

- Continue fabrication, and receipt, of vacuum vessel segments;
- Commence field period assembly with Prep Station #1;
- Monitor and oversee TF coil vendor fabrication;
- Increase technician staffing to support increasing activity in the Coil Winding Facility, Autoclave, and eventually Field Period Assembly operations;
- Internally assemble teams consisting of technicians, engineers, diagnostic personnel, etc. to support Field Period Assembly work.

8. Project performance April (Ron)

The following project performance items were discussed:

- Thru the end of April performance data: SPI=.96 and CPI=.96.
SPI due to:
 - VVSA fabrication behind;
 - TF fabrication vs. procurement behind;
 - MC component development behind;
 CPI due to:
 - MC winding;
 - Fabrication of MC components;
 - VV design;
 - TF Fabrication
- ECP #43 released \$892K to support changes in the EIO/MTM modular coil fabrication work. Contingency is now \$8.7M or 22.4% of remaining funds;
- Upon re-planning in preparation for the Lehman Review (May 2006), the schedule contingency has increased from 5 months to 6 months along the project's critical path. The effort to compress and/or move work forward is anticipated to help alleviate management oversight costs to the project.

9. ECP status

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

- a) ECP 43 was approved by DOE-FPD which released contingency of \$892K. \$356K is for technical changes incorporated into the design fabrication of the modular coils. \$535K is to support the incentivized contract with EIO/MTM;
- b) ECP XX will request a release of contingency to support unrecoverable in-house cost variances and re-planning effort in April. However, the DOE-FPD expressed concern about releasing contingency to clear cost variances at this time. Additional discussions are needed.

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

June 13th Next IPT Meeting
 Week of June 12th PPPL Site-Wide ISM Re-Certification
 June ??? Next SC Watch List Briefing (TBD)