NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Tuesday, March 28, 2006 at 11:30AM are as follows:

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

DOE HQ: B. Sullivan, K. Chao

ORNL: J. Lyon

PPPL: W. Reiersen, R. Templon, H. Neilson, R. Strykowsky
J. Levine

1. DOE News (Barry/Kin)

a) Kin is assembling the members for the upcoming Lehman Review in May. The NCSX Project Team provided some recommendations for new members from the list of possible candidates mentioned. Subsequently Brad Smith (MIT) was added to the committee, joining David Anderson, Jeff Hoy, Bruce Strauss, Kin Chao, and Steve Meador.

b) A draft copy of the OMB Exhibit 300 will be provided to the NCSX Project Team. (done). This document is still in draft form.

c) The criteria to change the NCSX project from 'yellow' to 'green' was discussed. The criteria proposed by the IPT members will measure the improvement of MCWF vendor delivery performance. FPD will discuss with OECM.

2. Safety Management (Jerry)

a) Safety record is excellent. No recordable TRC incidents or DART cases in the last 5 months. This applies to both lab-wide activities and NCSX activities;

b) ISM re-verification is now the week of June 12th;

c) A Project Hazard Analysis is being performed/revised for the NCSX Manufacturing Facility which resides in the old TFTR Test Cell. The revision is to incorporate work on field period assembly, which will start with vacuum vessel prep activities later this year.

d) The PPPL Activity Certification Committee (ACC) will perform a review of the Vacuum Vessel Prep Station. The ACC has been asked by the NCSX Project to

perform this function which has been successfully used on other NCSX facilities such as the MC Winding Station, Autoclave and Coil Test Facility.

3. Lehman Review

The upcoming Lehman Review in May was discussed in paragraph (1) above.

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 was completed slightly ahead of schedule. Scheduling of the cold testing of C-1 has not yet been determined yet. This effort has successfully met the Level II milestone.

b) The C-2 MC: Winding of conductor is complete. Metrology measurements are underway. Although it is still too early to quantify the schedule improvement of winding activities of C-2 relative to C-1, but there is indication of potential cost and schedule improvement.

c) The C-3 MC: The coil is now being prepared for winding in the NCSX Winding Facility.

d) The C-4 MC: The (C-4) is en route to PPPL slightly ahead of the revised vendor schedule. (Update: the C-4 is now at PPPL and is undergoing routine examination)

MCWFs

The following is the status of MCWFs in vendor production:

a) C-5 is in the 5-axis machining phase and is still on target for the May 4th delivery;

b) A-1 is in the 3-axis machining phase;

c) A-2, 3, and 4 are in the rough machining phase;

d) B-1 was shipped from the foundry and awaits machining

e) C-6, A-3, A-4, A-5, A-6, B-1, B-2 and B-3 were poured and await machining operations.

f) B-4 is next to be poured.

In summary:

4 in foundry phase
7 in machining phase
4 delivered
15 total

VVSA

The VVSA effort continues as follows:

a) The 1st segment was found to have out-of-tolerance issues. The NCSX Project Team is investigating the impact to this issue. Physics as well as machine assembly considerations are being analyzed. Therefore, the delivery of the 1st period has slipped; a new schedule will be established as part of the corrective action plan being developed by the project and the vendor.

b) The 2nd segment fabrication is on hold until the tolerance issue has been addressed on the 1st segment;

c) The 3rd segment continues fabrication with machining of the holes for the diagnostic ports. Although the delivery of the 3rd segment is well off the project's critical path, there is a Joule milestone attached to this work which requires careful monitoring by the NCSX Project Team.

Other components and facilities

a) Turning fixtures for the Vacuum Vessel Prep Station continues fabrication to incorporate a turning brake. Materials to support the Prep Station work include finalizing the design and initiating fabrication and/or procurement of component parts (diagnostic loops, heater tape, heating and cooling tube, etc.) Plans and procedures are being developed for the Prep Station. Also, the ACC will review this facility later this year but prior to operation.

b) Design support is still 'tight' but supports the ongoing fabrication and procurement efforts. Focus is on procuring parts for the A-type modular coils which will begin receipt in mid May. The NCSX Project wishes to procure these components versus fabricating in-house as was done for the C-type coils.

5. Procurement (Rod)

a) Procurement of the TF coils has been initiated. Two bids have been received. The PPPL Procurement division assembled a bid proposal review team to review the bids. The bid package award will be forwarded to DOE-PSO for approval within the next two weeks.

b) EIO contractual modification is awaiting final signature. In the interim, EIO/MTM is performing against the revised delivery schedule set forth in the contract modification.

6. Review of critical issues (Hutch/Wayne)

a) A new category I Critical Issue has been 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 is investigating whether the shear forces during machine operation will require additional mechanical fastening. Additional bolts may be added to some of the MC's flanges, or possibly use a key type fastener. Upon determining the final remedy, the MCs at PPPL would have there flange modified in-house, and the pending coils from EIO/MTM would incorporate the design change.

b) An existing category II Critical Issue regarding the initial high cost of wedge casting for the TF coil is moving forward. The fabrication of these components will be provided by the TF bidders discussed in paragraph 5(b) above. This strategy is anticipated to reduce the cost of the wedge plates.

7. Planning for the next 6 months

As discussed earlier in the IPT meeting, the focus will continue to be on the receipt 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;
- Procure TF coils and oversee vendor fabrication;
- Prepare for next Lehman Review in May;
- Increase technician resources 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 thru February (Ron)

The following project performance items were discussed:

- Thru the end of February performance data: SPI=.97 and CPI=.97.

  SPI due to:

  - VVSA fabrication behind;
  - TF fabrication vs. procurement behind;
  - MC component development behind;

  CPI due to:

  - MC winding (learning curve improvement look promising)
  - Fabrication of MC components
- There has been no drawdown on contingency since ECP39. Contingency is at 26.2% based on remaining funds. However, a proposed ECP (#43) requests the release of $891K to support changes in the EIO/MTM modular coil fabrication work (more details below). Contingency after DOE-FPD approval of ECP43 will be $8.7M or 22.4% of remaining funds.
- A little over 5 months of schedule float continues along the project's critical path;

9. ECP status

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

a) ECP 43 requests a drawdown on contingency of $891K. $356K is for technical changes incorporated into the design fabrication of the modular coils. $535K is to support the incentive 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.

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

April 25th ..... Next IPT Meeting
Week of June 12th..... PPPL Site-Wide ISM Re-Certification
May 9-10, 2006..... Next Lehman Review at PPPL