

NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Wednesday, Nov 9, 2005 at 11:00AM are as follows:

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

DOE HQ: B. Sullivan

ORNL: J. Lyon

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

1. DOE News (Barry)

- a) Lehman Review Nov 2-3, 2005: The draft report prepared by the review team looked OK. The review team recognized the schedule challenges regarding receipt of modular coil winding forms (MCWFs) from the vendor, and winding operations by PPPL. The next 6 month will be critical in accessing project performance;
- b) The proposed budget for fusion energy sciences shows a \$5.1M increase for compact stellarators and small experiments in FY06. It is expected that the NCSX MIE project will receive an additional \$1.7M. OFES stated that there would not be a rebaseline exercise associated with this change.

2. Safety Management (Jerry)

- a) There was 1 recordable injury case reported for the NCSX project. The injury involved a worker that cut his finger while drilling a mounting hole in an electrical box. The injury was not DART reportable. As a response, "tool box" meetings are being used to reassert safe workplace practices;
- b) As reported in past IPT meetings, the NCSX project continues to be part of PPPL's site-wide hazard awareness training initiative. This initiative has now been expanded to the Oak Ridge National Laboratory.

3. Last Lehman Review (Hutch)

A Lehman Review was held on November 2-3 regarding technical, cost/schedule and project management of the NCSX Project. Overall, there were 12 recommendations

provided by the review team. These will be implemented by the NCSX Team. Some specific recommendations discussed were:

- a) Increased reporting and status updates to DOE of the TF and Modular Coils (MC) procurement and fabrication during the next 6 months;
- b) Continue to pursue the options for the procurement of planar coils including the option to procure the coils from China (EAST Tokamak engineering team);
- c) The next Lehman Review is tentatively scheduled in about 6 months (May 2006). At that time, an updated estimate to complete (ETC) should be presented. It is also recommended to have the review at PPPL again.

4. Project technical progress (Hutch)

MCWFs

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

- a) The C-1 casting is being wound at the PPPL Coil Winding Facility. After performing some additional preparation work at PPPL, cladding is now being installed on the form. Winding of the conductor will begin shortly;
- b) The C-2 casting continues in the machining phase with the completion of 3 of the 5 steps of 5-axis machining phase. Members of the NCSX Team will visit Major Tool and Machine (MTM) later this week to assess technical performance and witness technical changes from lessons learned during the receipt and inspection of the first casting (C-1) at PPPL. The C-2 casting is anticipated to arrive at PPPL at the end of November;
- c) The C-3 casting is at MTM and undergoing initial 3-axis machining;
- d) The C-4 casting completed radiographic inspection at the foundry (MetalTek) and was shipped to MTM where it awaits machining;
- e) The C-5 casting is at the foundry currently undergoing routine weld repairs and radiographic inspection;
- f) The C-6 casting was poured at the foundry. However, it was determined that the quality of this casting required that it be re-poured versus performing weld upgrades;
- g) The A-1 casting is at MTM and is awaiting machining. However, the current strategy is to complete all the C-type casting first;

- h) The A-2 and A-3 castings have been poured and remain at the foundry for routine weld repairs and radiography;
- i) The B-type pattern and mold are complete. The foundry anticipates pouring the first B-1 casting within the next day or two.

VVSA

- a) The VVSA effort continues. Welding of the ports on the first period section is underway. Welding of the ports is taking longer than thought due to alignment issues. But this concern diminishes as experience is gained;
- b) Work on the 2nd period also continues. Welding of the panels and period halves are underway;

Other components and facilities

- a) The Twisted Racetrack Coil (TRC) has been sectioned to determine the location of the winding pack and the quality of the epoxy impregnation. Although examination of dimensional accuracy is ongoing, initial impressions are good;
- b) Coil winding of the C-1 MC is underway. Ground wrap was installed and lacing strips (to aid in dimensional stability of the winding pack) is being installed.

5. Procurement (Rod)

- a) All component parts in support of winding the first modular coil (C-1) have either been fabricated in-house or are being procured so as to be available when needed.
- b) There are 5 procurement packages underway or planned to support the VV fabrication;
- c) EIO (prime contactor to Lawton, MetalTek and MTM) has provided a rough order of magnitude estimated price increase of \$110K to cover engineering changes that were requested upon technical examination of the first MC (C-1) at PPPL;
- d) As previously reported in past IPT Meetings, the procurement of TF Wedge Castings yielded only 1 bidder and the bid was significantly higher than anticipated. As a remedy, the NCSX Team will relax dimensional tolerances, change material type, and/or substitute a weldment process versus a casting process to improve bid performance.

6. Review of critical issues (Hutch/Wayne)

There are currently no category I critical issues:

- a) The TF Wedge Castings, discussed in paragraph 5(d) above, has a proposed remedy and therefore considered category II. This is not a critical path item.
- b) The tight real estate issue between the VV, modular coil shell, and cryostat is being addressed by examining different cryostat designs and materials. This issue has been assigned as a category II and is not a critical path item.

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

- a) A detailed plan for FY06 was provided in ECP 39 and was signed by the Federal Project Director;
- b) Any additional funds received for the NCSX project (discussed in paragraph 1 above) will accelerate portions of the project scheduled for FY07 into FY06. An increase to the FY-06 contingency level will also be examined.

8. Project performance thru October (Ron)

PARS data will not be available for another week.

9. ECP status (Ron)

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

- a) ECP 39 baselines FY06 activities and releases contingency to support past and future FY06 work. ECP 39 was approved;
- b) No further ECPs requiring DOE approval have been identified at this time

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

Nov 29 -- Next IPT at 11:00am
Nov 29 -- OFES Monthly Briefing at 3:00pm
May 2006 -- Next Lehman Review at PPPL