

NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Wednesday, January 23, 2008 at 11:00 am are as follows:

Attendees: DOE-PSO: J. Makiel, L. Dietrich, A. Indelicato

DOE HQ: B. Sullivan, K. Chao, S. Barish

ORNL: J. Lyon, J. Harris, D. Hillis

PPPL: H. Neilson, J. Malsbury, J.L. Anderson, R. Templon
D. Rej, R. Strykowski, J. Levine, R. Hawryluk

1. DOE News (Barry)

- a) Preliminary funding guidance has been provided to PPPL in support of re-baseline planning. The funding number is an aggregate for both NCSX and NSTX operations in which PPPL must provide a proposal of how the funds are to be shared amongst NCSX and NSTX. Since the funding guidance impacts activities outside of the NCSX Project, further discussions with OFES are warranted. In the meantime, the NCSX Project is moving forward with the re-baseline.
- b) A schedule of events for the re-baseline effort has been provided to the NCSX Project. The schedule has a faster pace than previously discussed and includes an SC Independent Project Review (i.e., "Lehman Review"). However, schedule conflicts must still be remedied which will require further discussions with the Project and SC-1.3.
- c) On February 4th, HQ Program Leaders will meet on the FY09 budget in preparation of the Field Work Proposals. Details on a budget planning meeting are underway.
- d) The Quarterly Briefing by SC-1 to the Deputy Secretary on all SC projects has occurred. The usual NCSX Quarterly Briefing by PSO to OFES on FY09 1st quarter activities is scheduled for January 31st. DOE personnel only.
- e) The next SC Watch List Review is being planned for the February timeframe. It's been a while since we had one. Further, we never had a Watch List briefing for the new SC-2 (Dr. P. Dehmer).

2. Safety Management (Jerry)

- a) There were no NCSX related safety incidents.
- b) A second follow-up Activity Certification Committee (ACC) for Station #2 activities convened on January 15th. Findings of the ACC review were satisfactory. The ACC commended the construction manager for his thoroughness in the planning of Station #2 workscope activities.

3. Rebaseline Status (Kin/Barry/Hutch/Jim A)

- a) The deadline for the NCSX Project Team to publish the new baseline documentation is March 5th. The Project is working hard to support this date.

- b) A question was raised as to the content and focus of the SC Review. The last review had more emphasis on cost and schedule versus technical issues/progress. However, Kin mentioned that the review committee will also consist of technical folks.
- c) The NCSX Project Team can provide recommendation of committee members if needed. There now exist a large pool of candidates that are familiar with the NCSX Project.
- d) Barry and Kin will work together on a draft charge letter later this week. The NCSX Project Team also wants to meet with Dan Lehman to discuss the Project Review agenda at least 1 month prior to the review.

4. General Topics (Rich/Jim A/Jim L)

- a) Jim Lyon (NCSX Deputy Project Manager) will be retiring at the end of January. Jeff Harris (ORNL) will assume Jim's responsibilities. Don Hillis (Jeff's supervisor) will also support the NCSX Project functions at ORNL during the transition.
- b) Staff Resource Update:
 - PPPL has hired two new engineers to support Tom Brown (design integration) and Art Brooks (engineering analysis). The engineers will be onboard in February. PPPL has also hired two designers. One designer has been onboard for nearly two months now and the second just recently hired.
 - ORNL has a window of opportunity to access more resources from the ITER Project as an interim bolster to support NCSX design activities.

Staffing increases will hopefully accelerate both schedule critical and non-critical design work, (electrical leads, PF and trim coils, cryogenic systems and cryostat design).

5. Project technical progress (Hutch)

The following provides a brief status on the major components:

MC Winding

- a) Modular coil winding operations are proceeding well. MC winding activities are slightly behind schedule but MC winding is no longer a critical path activity.

Field Period Assembly

Station #2 (mating modular coils together)

- a) Station #2 activities continue to be behind schedule. The start of half-period production has been delayed by delays in MC interface design and process development. This is a critical path activity.
- b) A significant portion of the shim material delivered to date has issues concerning the consistency of the thickness of the alumina coating. This issue is being worked with the vendor. The Project is also investigating alternative materials as a preventive measure. Delay in the receipt of acceptable shims will impact the Project's critical path.

Station #3 (assembly of coil half period '3-packs' over the vacuum vessel)

- a) No issues to report.

TF Coils

- a) Several TF coils have been received to date and a sufficient quantity has been received to support future Station #5 activities.
- b) Wedge casting deliveries, provided via subcontract to Everson Tesla Inc (ETI), will likely threaten ETI's internal critical path. Specifically, the issue is with delay in the machining of the wedge castings. The Project is addressing this concern with ETI and alternate machining services are being investigated.
- c) TF coils are not a critical path activity, and are also well off the critical path.

PF Coils

- a) Conductor for the PF coils is being procured. The conductor will be provided to the successful bidder for PF coil fabrication. The final design review (FDR) will occur on February 11th. The target date for procurement award is now May 2008 with a level 2 milestone of Sep 2008.

Trim Coils

- a) Physics and engineering personnel completed their analysis to determine the amount and type (kilo-amp turns) of the trim coils. It has been determined that 48 trim coils via 48 circuits should be provided by the MIE project.
- b) Trim coils at the mid plane region, as previously discussed at the last IPT meeting, will not be provided in the MIE. However, these coils may be added post MIE and be located external to or between the TF coils.

Design

- a) Coil structure design work continues. The final design review has been delayed until March 2008 in order to optimize interfaces with the trim coils. The coil structures work package is well off the critical path.
- b) Procurement of the machine base support structure is scheduled for later this year. Detailed engineering design has begun.

Metrology

- a) The new photogrammetry system is now on order and will be available in March 2008;
- b) The Project is looking to purchase another laser tracker;
- c) The Romer[®] arms are working satisfactorily;
- d) Metrology continues to be a very important activity in this project.

6. Procurement (Rod)

- a) Procurement is working to expedite the resolution to the shim coating issue;

- b) Procurement is supporting the purchase of the new \$80K photogrammetry system and the upgrade (trade-in) of the Romer[®] arms;
- c) Procurement will establish a designated procurement official to expedite PF and trim coil procurement. Advanced tasks will include the early establishment of a source selection board and draft a preliminary RFP.

7. Review of critical issues (Hutch)

- a) Existing risk: Risk involved Station #2 (weld distortion, permeability changes, damage to modular coils, etc) are at the forefront as Station #2 activities commence;
- b) Existing risk: "Staffing" issue is currently being remedied by PPPL and ORNL as discussed in General Topics above;
- c) Retired risk: "A full array of trim coils" has occurred and will be incorporated into the new baseline proposal.
- d) New/modified risk: The impact of the receipt of unsatisfactory shims must be evaluated.
- e) Other risk modifications for consideration (via email from J Makiel to J Anderson):
 - Extend the existing risk "damage to modular coils during winding" to also include post winding activities involving the modular coils (field period assembly);
 - Combine existing risks involving trim coils and update accordingly (see 7(c) above).

8. Planning for the next 6 months (Jeff)

The following activities will continue:

- Continue to prepare the Project's re-baseline package;
- Complete modular coil winding;
- Commence Station #2 activities;
- Continue off-site fabrication of TF coils;
- Design and preparation for Field Period Assembly Stage #3, coil structure design, base structure design, PF and Trim coil design;
- The new NCSX Project Manager (Don Rej) will be onboard in February.
- Prepare for upcoming SC Project Reviews.

Upcoming Level II milestones are as follows:

A new schedule of level I and II milestones are proposed for the Project as part of the re-baseline package. The proposed upcoming level II milestones are:

Nov 2007: MC Interface FDR (excluding C-C) [Status: completed]

Dec 2007: Deliver TF Coils for FPA #1 Assembly (Qty=4) [Status: completed]

Dec 2007: Shims for 1st MC Half Period Assembly (Station #2) Available [Status: pending].

Mar 2008: PF Coil PDR [Status: completed in December 2007]

9. Project performance through end of November (Hutch/Jeff)

Since the Project's authorized baseline is no longer credible, the following statistics are based on the proposed baseline retroactive to May 1st (approximately 8 months). However, there have been workscope changes to the proposed baseline since then. Detailed data for the end of December 2007 are not yet available.

CPI= 1.09

SPI= 0.92

Costs (end of Dec) = \$75,425K

Note from previous IPT meetings: The project continues to be graded "Red" because the Project's baseline is no longer deemed credible. It was determined that the Project should continue to formally track in PARS against the existing baseline, as per ECP53. In the interim, the Project will informally track against the proposed baseline.

10. ECP status (Jim/Hutch)

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

- a) There are currently no ECPs pending DOE approval. An ECP will be developed to support the project's re-baseline.

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

Jan 24Quarterly Report Briefing for 1st quarter of FY08
Feb 12.....Next IPT at 11:30am
TBD.....SC Watch List Briefing (*likely in Feb 2008*)
March 25-29.....SC Project Review (*may change to April*)
April 1Documents to OECM
April 29-May 2.....EIR by OECM
May 21pre-ESAAB
May 30ESAAB report
NLT June 30.....ESAAB