

NCSX IPT Meeting Minutes

The minutes from the NCSX IPT meeting of Tuesday, April 15, 2008 at 11:30pm are as follows:

Attendees: DOE-PSO: J. Makiel, L. Dietrich, A. Indelicato, G. Pitonak, B. Bozarth

DOE HQ: B. Sullivan, K. Chao

ORNL: Input provided via email from J. Harris

PPPL: R. Hawryluk, R. Strykowski, D. Rej, R. Templon, J. Levine, J. Malsbury

1. DOE News (Barry)

- a) The Project (Ron) inquired as to what will happen when the \$92.4M BA runs out later this calendar year without an authorized re-baseline in place. Barry will investigate this question and advise. Brian Bozarth will also provide support. PSO will advise OFES in writing regarding this issue.
- b) The Project also inquired as to the ability to convert PPPL operating funds into MIE funds to augment BA this fiscal year. The advanced BA would support an accelerated design schedule. Barry will also investigate this question and advise.
- c) Another fiscal quarter has past and a second quarter report will be prepared. Barry will advise if there will be a quarterly briefing with OFES.
- d) Jeff inquired if an SC Watch List Briefing will occur this month (April). Barry will investigate and advise. Of note, the FPD has never had a Watch List briefing with the new SC-2 (Dr. P. Dehmer).

2. Safety Management (Jerry/Leif)

- a) There were no NCSX related safety incidents.
- b) There is a lot of safety oversight recently. Areas of focus are industrial hygiene.
- c) The Project has given notification of upcoming crane lifts to support Station #3 activities. PSO-ES&H will coordinate an independent DOE review of the upcoming lifts. As a side note, Mike Viola (PPPL lift engineer and Field Period Station manager) has already performed an internal review of the upcoming lifts.

3. SC Independent Project Review (Jeff M/Kin/Don/Jeff H)

- a) Background: The Project presented a proposed baseline at the SC Independent Project Review ("Lehman Review") last week (April 8-10). The proposal was 'schedule driven' which used schedule float of non-critical path work as contingency to support critical path work thus driving as much work forward that the budget can support. The TPC that was proposed was \$170M (vs. \$102M) and CD4 date as August 2013 (vs. July 2009).

- b) The Review Committee determined that “*Due to maturity of design, need for continuing the strong integration of the systems, and the need for more detailed evaluation of the risk of possible future failures, the project has not yet met the normal DOE expectations for a rebaselining action.*”
- c) The following are specific issues discussed during the IPT meeting:
- Accelerate more design to improve estimates and reduce risk - - The Project is working with PPPL Senior management to identify PPPL internal funds that may be re-programmed to MIE funds to support the accelerated design work. If additional MIE funds can not be obtained, delaying near critical path procurements may be considered.
 - The design of the cryogenics/cryostat, coil electrical leads and neutral beam ducts were specifically noted by the Review Committee as needing more advancement in design - - As per the proposed baseline, the coil lead design is currently scheduled for a PDR this summer. However, the cryogenic/cryostat system and neutral beam duct PDRs are not schedule until FY09 and therefore require acceleration to support the baseline change proposal. The Project will submit to DOE a ‘Recovery Plan’ by May 1st.
 - The Review Committee has also recommended that field period and final machine assembly plans have their maturity improved. Due to their current status, the Project has assigned them a significant risk in the Risk Registry. The Review Committee prefers that these risks be downgraded or retired by improving the maturity of the assembly plans prior to rebaseline. - - The Project will submit to DOE a ‘Recovery Plan’ by May 1st.
 - Obtain additional technical resources - - ORNL and PPPL continue to work this issue. Don and Hutch will visit Jeff H at ORNL later this week to develop a resource plan. Jeff H is currently working the issue at ORNL and has identified experienced technical resources that may be available in the near term to support the cryogenic and cryostat design. The Project Team is also investigating if cryogenic work can be provided or augmented by Thomas Jefferson Laboratory.
 - Provide 1st article production for welding of the first modular coil three pack at FPA Station #2, and trial fit up of a three pack over the vacuum vessel at FPA Station #3, - - discussed in Project Technical Progress in paragraph 4 below.
- d) At this time, it appears that the Project’s Baseline Change Package will not reach the ESAAB for approval for another 6 to 8 months. The OECM EIR previously planned for May 21-23 has been indefinitely postponed.

4. Project technical progress (Don)

Only technical matters with concerns were discussed:

- a) Station #1: Pressure testing of the heating and cooling tubes that are attached to the exterior of the vacuum vessel sectors has yielded several leaks. 13 of the 192 He cooling hoses were found to leak, and are (being) replaced. All 13 appear to be a supply chain QA problem. A failure mode analysis was performed by the design engineer some years ago and is being re-reviewed to examine the “what if this happens in the assembled machine” scenario. Most of the leaks have

been identified in the area of transition from the flexible corrugated tubing to the rigid tubing adjacent to the risers on port 12. One leak was noted within the flex tubing under or near an attachment clamp. Further investigation is required to determine why the leaks occurred.

- b) Station #2: Welding is underway for the first two coils (A1 and B1) that comprise a modular coil 'three pack'. The first half of welded shims (or shear plates) along the inboard flange interface went well and distortion was acceptable. The second and final weld on the other side of the shear plates have begun. Although weld distortion is acceptable at the moment, it is approaching the limit and is of concern. To assist in this effort, PPPL is soliciting external weld expertise. This task is ahead of the proposed schedule, but is considered as an important validation of future machine assembly and has considerable risk.

5. Procurement (Rod)

- a) The PF coil procurement is on track for award in early May. SEB panel is now reviewing the bid packages and has visited the bidders.
- b) A new 'buyer' is onboard in the Procurement Division.

6. Review of critical issues (Jeff M)

- a) The risk registry has significantly grown in preparation of the recent baseline change package proposal as to bolster contingency formulation and risk assessment/mitigation.
- b) The 'bounding risks' stated in the draft Risk Management Plan was discussed by the SC Review Committee and summarized by the statement found in paragraph 3(a) above. That is, the Committee believes that these risks, whole or in part, should be included in the Monte Carlo analysis.
- c) No new risk items have been identified. See Project Technical Progress at paragraph (4) for current technical risk issues being worked by the Project Team.

7. Planning for the next 6 months (Jeff M)

- Prepare a 'Recovery Plan' and submit to DOE by May 1st.
- Continue with design, component, material and service procurements, modular coil winding and field period assembly. The Project will continue to cost at a rate of about \$1.3M per month.
- Revise the Baseline Change Package accordingly and re-present to the SC IPR later this fiscal year.

8. Project performance through end of March (Jeff M)

Since the Project has not had a valid baseline for about two years, and another 8 months is anticipated until a new baseline is approved, how to track the performance of the Project in the near term was discussed.

It was agreed that the project will assess the status of those work elements that will likely not have their estimate modified against the baseline proposal presented at the April 2008 SC IPR. However, an overall SPI and CPI cannot be generated. Also, the presented level 2 milestones will be re-reviewed and specific work packages (cryogenics/cryostat, coil leads and FPA assembly plans) will be monitored closely.

The actual cost at the end of March is \$79,291M.

9. ECP status (Jeff M)

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.

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

May 1.....	Recovery Plan (as per SC IPR)
TBD	DOE de-brief of SC IPR for Dr Orbach
TBD	SC Watch List Briefing
May 6.....	Next IPT Meeting
TBD	Quarterly Briefing with OFES (2 nd Quarter)
TBD	Next SC IPR to support re-baseline
TBD	EIR by OECM
TBD	ESAAB