Questions and Answers from March 23

1. Can PPA establish an agreement with the SLAC Site Office for disposal of moratorium metals, similar to the MOU developed at LBNL for Bevatron? This will eliminate the need to additional storage buildings, eliminate the costs to operate and maintain these spaces and eliminate the continued tracking of these controlled materials. BABAR is currently storing moratorium materials and will continue to do so over the next several years, so resolution of this issue is urgent. [dbm, Wisniewski]

   The SSO has been a champion of attempting to obtain an exemption from the Metals Suspension. The Radiation Physics group believes that it has a viable scheme for such and exemption, which would allow free release of these metals. However, such a path could fail.

   In parallel with these initial steps on the exemption effort, we will investigate application of the LBNL plan as an alternative. We agree that this would greatly simplify planning and execution of both PEP-II and BABAR D&D, while also producing significant savings against the alternative on-site storage option for suspension material and for this reason we will enthusiastically follow up with the SSO. It may be that it is even more cost effective to pursue disposal over the investment of RP time on the exemption plan.

2. Assuming Super-B and Project-X decisions are taken in Fall 2010, please make case "F" estimating a system where there is no extra building (or the most minimum building possible) and there is 'just in time' shipment or equivalent. Proper MMS may need to be extended to maintain the systems. [Seeman]

   The ideal removal method would be to store the components in the PEP-II tunnel until the respective destinations are known and the shipping details have been worked out. Nevertheless, there will remain about 2 million pounds of materials that no project wants at this time and, thus, must be ultimately stored in a storage building or placed in a landfill.

   Costs:
   Release calculations = 1.5 M$
   PEP-X shipping = 0.5 M$
   Tunnel removal = 13.7 M$
   Bury rad wastes = 3.5 M$
   Landfill costs for 2 M lbs leftovers at 1$/lb = 2M$
   Landfill documentation, permits, oversite = 3 M$
   Shipping cost to landfill in 75 containers = 0.5 M$

   Subtotal = 24.7 M$
   Contingency (50%) = 12.4 M$

Total =	37.0 M$
INFN shipping =	3.7 M$
FNAL shipping =	1.3 M$

3. We believe that turning off the water in the tunnels will decrease the T to below 55 degrees, beyond the dew point. The resulting condensation will cause damage to the magnets, etc. If you run a small current through the magnets, the T in the tunnel will remain above the dew point and solve the problem of long term storage in a safe fashion. Wouldn't this eliminate the need for new storage buildings? Couldn't the accelerator components be moved out of the tunnel from a MMS when needed in a sufficiently speedy fashion to satisfy the eventual need for re-use or disposal? Can you implement this approach? What will its cost/year be? [Seeman, Sullivan]

   When the magnet water is turned off the tunnel will get colder. We will monitor the tunnel temperature and keep air flow to a minimum. However, if dew forms on the magnets, we will add a uniform heat source along the circumference of the tunnel. Running current through the magnets coils would work but is a potential electrical safety issue. Perhaps a better way would be to add small electrical heat at each of the 110 v outlets spaced every 50 feet or so along the tunnel floor. This arrangement should provide a sufficient heat source to keep the magnets dry.

   The ideal plan would be to leave the PEP-II components in the tunnel until we can either ship them to Fermilab or Italy. The new storage building is the "no alternative" solution, i.e. there are no new initiatives that want the components and we have to keep the material on site (no metals suspension exceptions).

4. How will you drain the magnets to be sure that there isn't any stagnant water left behind that could damage them over time? [Seeman, Sullivan]

   Each electro-magnet has from two to eight water circuits. To dry the magnets we will disconnect each of the hoses from the water manifolds of the magnet and blow house air through each individual coil circuit. The air will flow until all the water is removed and then we will add a safety factor of, say, 50%. Tests will be done to find the best safety margin. A technician will use several drying setups so that they leap frog their way along the magnets with each magnet coil receiving adequate drying time.

5. The need for magnets for Project-X appears to be minimal. Isn't it in the best interests of the US program to send the whole set of equipment to Super-B and wouldn't this make the Italian group more enthusiastic for PEP-II components? Is it possible to get firm decisions and inventories of desired pieces of equipment from Super-B and Project-X within 18 months? [dbm, Kahn]

If the US program adopts the recommendation from the recent P-5 report to include US participation in a SuperB Factory into future planning, we agree that it would be more attractive to INFN and the SuperB project to have a complete set of the required dipole and quadrupole magnets from PEP-II. The alternative of sending a reduced set would force SuperB to fabricate replacement magnets in order to provide a complete complement for the new HER ring. Our understanding from INFN is a decision on new funding for SuperB by the Italian government will be forthcoming in the next year, and perhaps as early as this summer. Project-X has laid out a critical decision pathway which should result in a technical choice on the transfer line by fall of 2010. Therefore, we believe that firm decisions and inventories of desired equipment will be possible by the end of calendar 2010.

6. The lack of an EVMS for BABAR D&D appears to make it hard to track and report. Stanford has a certified EVMS in place, so why don't you use it? Can't an EVMS be tied into the WBS you already have? [Wisniewski, Krebs]

   During the construction phase of BABAR, an earned value monitoring system based on Primavera was used to track the project. Note that the BABAR construction was ~5x larger project in then year dollars than the disassembly project. The construction project involved tracking in-kind contributions from foreign agencies as well. Use of this system required employment of three professional analysts and was a significant burden on the intermediate level management. This could be justified on the basis that the construction project included many complicated procurement and construction activities, which were running in more-or-less independently until they the final installation phase.

   The BABAR experience with upgrades suggests that a less formal project tracking procedure will be suitable. The first of these upgrades, the 2002 upgrade of the forward RPCs, was a ~$1.5M project with comparable in-kind contributions. This project was executed over a year and a half, was completed on schedule and turning back some of the contingency. The major upgrade for production and installation of the barrel LSTs was estimated as a ~$5.5M project, including a healthy contingency. Again there was a large in-kind detector contribution. A large fraction of the US contribution was labor involved in the installation of the system. The installation was complex, covering extended 6 (and sometimes 7) day weeks, with up to 3 shifts per day in two installation campaigns with construction and installation stretching out over four years. It was possible to execute this construction and installation project well within budget; with the majority of the contingency returned at completion. We conducted periodic estimates to complete to be sure that we would make it through the endgame. (Simultaneously BABAR was also executing an upgrade for the Drift Chamber readout (~$.7M), on time and on budget.) These projects were managed with monthly reports from the budget analyst, and drill down through the monthly expense reports available on the multiple accounts (~12) used to manage these simultaneous projects.

The BABAR D&D project is a single thread linear project. A small group is involved in the disassembly. The main outside services are rigging support, which is only charged on an as-used basis. There is little M&S to keep track of. The costs are primarily salary. The total estimated cost is however a factor of 3 greater than the upgrade projects. We considered using Primavera to monitor our progress. However, we rejected this since it would require bringing in an expensive analyst and adding significantly to the management burden. We have considered bringing on board a half time scheduler from the Facilities Department, but so far believe that PPA financial analyst will be sufficient.

Since the project is a sequential disassembly, with a mostly uniform burn rate due to the small core disassembly team, we advocate the use of project milestones as an effective compromise between more formal tracking tools and the need to assure earned value is being achieved as planned.

7. It appears that D&D decisions are being slowed up by the fact that the D&D projects are held within PPA. Why can't the management of the D&D activities be transferred to lab-wide management now? [dbm, Kahn]

   We believe that PPA is best positioned to both promote a resolution to tentative re-use scenarios with INFN and Fermilab, and to negotiate the necessary agreements on re-use of PEP-II and BABAR components given that these scenarios will directly impact the success of an important component of our science program. As currently configured ETS does not have the capacity to organize and mount a major D&D project, along with the significant suite of stimulus-package projects they are involved in over the next few years. Decisions on re-use scenarios should be forthcoming by the end of 2010. At that time, it will also be clear whether cost-savings can be made in the BABAR D&D plan through a more disposal-oriented execution of the remainder of the project. It will also be clear whether the actual execution of the PEP-II D&D should be a partnership with INFN and SuperB, or an industrial-style dismantling best executed by ETS.

8. Why is PEP-II MMS costing between $1.9M and $1.0M between FY09 and FY11? Please breakout these costs. [Seeman]

   See attached spreadsheet for detailed breakout.