

AP Video Conference Minutes

12/12/00

Attendace:

ORNL – Sarah Cousineau, Sasha Aleksandrov, Dong O Jeon, Slava Danilov, Paul Chu, John Galambos, Weishi Wan, Bob Gluckstern, Alexei Fedotov, Eugene Tanke.

BNL – Jie Wei, Yannis Papaphilippou, Nuria Catalan-Lasheras

LANL: Jim Stovall, YY Lee, Bill Weng, Deepak Raparia, Jim Billen, Harunori Takeda, Subrata Nath

LBNL – John Staples, Rick Gough

JLab – Warren Funk

1) DOE Review Summary

Action item: Continue and complete re-baseline work within the next two months.

Other key issues discussed:

- a) R&D: It was reported to DOE that the cutting of funds to the major R&D projects should not significantly impact the design of the accelerator.
- b) New parameters: The committee was interested in the physics group's level of comfort with the new parameter list, particularly the new energy coming out of the linac. The group was advised to present a detailed analysis of beam with and without sextupoles to ASAC in February.
- c) Commissioning: The level of involvement of partner labs in the commissioning process was discussed. It was agreed that the partner labs should participate in the commissioning, but the extent of involvement is yet to be determined.
- d) TPC: At this time, the DOE has no plans to petition congress to increase the TPC.

2) Re-baseline parameters rationale

The new beam energy, 840 MeV, was discussed. It was pointed out that with the newest cavity design parameters simulations show beam energies of about 817 MeV. It was argued that energy differences arising from uncertainties in cavity gradient and phase law are large compared to this difference. For the purpose of future simulations, the nominal energy will be taken to be 840 MeV.

Jie Wei pointed out that the end-to-end simulations need to be redone for the new energy before the next ASAC review, at least to first order. Because of time constraints, more detailed simulations, including sextupole studies, will be conducted for a 1 GeV beam.

3) Cavity field profile & linac energy

Discussed in (2).

4) Ring injection energy acceptance

Slava Danilov conducted studies of the ring injection energy acceptance. With the injection loss acceptance on the order of 3×10^{-5} , the energy acceptance is about plus or minus 10%, based on a stripping scenario optimized for 1 GeV. However, the minimum of the loss curve varies by about 5% depending on which formula is used, and so the optimization point can not be precisely determined.

5) Electron cloud & solenoid winding

It was discussed whether or not winding coils around the vacuum pipe in the ring can be used to confine electrons and reduce multipacting effects. From an engineering standpoint the idea is feasible, but the vacuum specialists say that 1 cm of clearance is needed around the pipe. It is now up to the physics group to determine how thick of a wire is needed to accomplish the desired effect. There was discussion that the solenoid field offers no help in the not-insignificant dipole and quad portions of the ring.

6) PAC01

Jie Wei showed a list of SNS abstract subjects that will be submitted to PAC01. The submission deadline is Jan. 15th.

7) Linac/High Energy Transport System interface meeting.

Progress was made in the meeting to clarify responsibilities for various drawings, etc.

There were some questions regarding ASAC-requested-simulations r.e. permanent magnet quads in the DTL and the conclusion was that no further simulations would be conducted before the next review. However the proposed plan of initiating R&D for EMQs which could be retrofitted in some DTL drift tubes (if needed) for matching purposes should be presented.

8) Misc.

Norbert Holtkamp will be taking Bob Kustom's place, and will begin work on Feb. 1 as associate division director. Bob Kustom will be leaving sometime before the summer.

The next video conference will be on Jan. 9th.