

DATE: February 22, 2002

TO: RHIC E-Coolers

FROM: Ady Hershcovitch

SUBJECT: **Minutes of the February 22, 2002 Meeting**

Memo

Present: Ilan Ben-Zvi, Ady Hershcovitch, Michael Iarocci, Jorg Kewisch, Satoshi Ozaki, Triveni Srinivasan-Rao, Thomas Roser, Dejan Trbojevic, Dong Wang, Vitaly Yakimenko.

Topics discussed: RF Cavities, Simulation & Calculations, 939 Setup.

RF Cavities: Satoshi opened the meeting by asking for the parameters of the RF Cavities, for the purpose of starting the ordering process from DESY. Ilan reviewed the parameters, which are basically the same as those covered in the January 18th, 2002 meeting. Vitaly asked whether it would be advantageous to consider a four cavity (i.e., lower gradient) system. Ilan's reply was that we want to operate at high gradient to have a short LINAC. The price is high refrigeration requirements.

Thomas initiated a discussion regarding bunching and de-bunching cavities. Requirements of these cavities are not stringent. In the ensuing discussion it became apparent that many options are opened. A compromise in choosing parameters needs to be made, as it was discussed in the February 1st, 2002 meeting. At this point, one reasonable choice is 1.3 GHz cavity, which can be at room temperature. Choice of bunch length will impact cavity frequency. But, bunch length and energy spread must be chosen to optimize cooling, for which additional computations and simulations are needed.

Simulation & Calculations: complete end-to-end simulations are needed to better understand certain physics issues that are critical in determining optimum bunch length. A system that allows for variable stretching is ideal. Thomas raised the issue of beam collapse to which Ilan replied that IBS would prevent it. A realization that beam burn-down and beam loss due to vacuum sparking (electron-positron pair generation) might be dominant effects, which reinforce the need for the Dubna and other codes. TECH-X will submit a SBIR phase II proposal.

939 Setup: Triveni reported that Dick is talking to vendors about vacuum components. May is target date for delivery of the SCRF gun. Dave Dowell of SLAC (formerly of Boeing) will be consulted with for the design during his planned visit to BNL in March. Mike reported that although a plan to have a cryogenic system in place for the May target has not been completed, a number of components are being worked on.