

DATE: February 10, 2002

TO: RHIC E-Coolers

FROM: Ady Hershcovitch

SUBJECT: **Minutes of the February 8, 2002 Meeting**

Memo

Present: Ilan Ben-Zvi, Michael Harrison, Ady Hershcovitch, William MacKay, Satoshi Ozaki, Stephen Peggs, Triveni Srinivasan-Rao, Thomas Roser, Joseph Tuozzolo, Dong Wang, Jie Wei, Vitaly Yakimenko.

Topics discussed: Electron Gun, Simulation & Calculations, and R&D Plan/939 Setup.

Electron Gun: on February 7, 2002, Joseph Tuozzolo, Chien-Ih Pai, and Ady Hershcovitch visited AES where Tom Schultheiss showed electron gun heating and cooling computations. Although their 3-D analysis has not been fully completed, all indications are that the AES electron gun design is feasible. Tom Schultheiss emphasized that by proving feasibility, AES fulfilled the goal of SBIR phase I, and that a detailed design is part of SBIR phase II. A frank discussion regarding more advanced cooling techniques (that are proprietary and highly classified) followed Tom's presentation. Ady suggested an outside design review (during phase II) before "cutting metal." The meeting concluded with a suggestion for a design meeting by BNL and AES personnel to show that the perceived physical interference of the cooling pipes with the solenoids can be resolved. Joe Tuozzolo pointed out that interference with the waveguide and tuners is a bigger problem. The February 8th meeting started with Joe Tuozzolo's review of the AES meeting. In answer to Thomas' question, AES personnel "know what they are doing." Since it is important to conclude the SBIR phase I with a design that shows the solenoids, **Ilan promised to organize a meeting to resolve the interference issue.**

In the February 1, 2002 meeting Dong and Waldo discussed magnetic fields of hundred's Gauss. Ilan pointed out that in some locations higher fields are needed. Dong claimed that a 2 kG field is required at the gun exit. Ilan showed a large bore superconducting solenoid with a 0.5 Tesla magnetic field.

Simulation & Calculations: Ilan showed a contract between BNL and JINR to perform (by Igor Meshkov and his group in Dubna) simulation of the electron cooling process in RHIC based on BETACOOOL. Efforts are continuing to involve BNL groups in computations.

R&D Plan/939 Setup: Triveni concluded the meeting by showing plans for the preliminary set-up and tests geared initially to extended photo-cathode lifetime.