Minutes of the bi-weekly Hall A G_E^n meeting
May 7, 2003

Present: Todd Averett, Gordon Cates, Donal Day, Doug Higinbotham, Xiaodong Jiang, Dick Madey, Kathy McCormick, Eli Piasetzky, Bodo Reitz, Alexandre Shabetai, Albert Shahinyan, Slava Tkachenko, David Waldman, Bogdan Wojtsekhowski

Several topics were discussed at today's meeting. David presented the state of the design of the target magnet box, Bogdan discussed the neutron detector construction and Todd and Gordon spoke of various target tests and developments. The schedule for the G_E^n collaboration meeting scheduled for the end of May was also discussed.

1. Target Magnet Box Design (David)
   - The target magnet design is being fleshed out:
     - Added support for the laser optics at the target
     - Design for support struts, aluminum supports, door hinges, thin field clamp, etc. includes many new details
   - Robin Wines is working on calculations of the coil properties.
   - To Do:
     - Detail Drawings
     - Final Drawings with fasteners and holes
     - Final Coil Design
     - Final Optics Holder
     - Vibration Isolation, pneumatic or mechanical? Leave options open.
     - Final Magnet Analysis
     - Budget and quotes for magnet construction
2. Tosca Simulations (Alex)
   - The mechanical design of the target magnet box and Bigbite have been completed in the IDEAS CAD program. The next step is to import them into TOSCA and perform the 3-D simulation of the field in the target region.
3. Schedule for Collaboration Meeting, May 29 (Bodo)
   - Tentative schedule show for collaboration meeting. A lot of discussion on whether the time for the talks is adequate.
   - Doug and Bodo will get together and decide which talks can be moved to May 30, to be presented during the BigBite collaboration meeting.
4. Status of Neutron Detectors (Bogdan)
   - 15 of the 40 new bars have been built, 10 tested. By the end of May, all 40 bars will be assembled.
   - For the old UVA neutron bars, how will the new hermetic PMT housing be incorporated?
   - From the test run results which saw a low rate on the neutron detector, it was decided not to replace the lightguides on the UVA neutron bars, which would eliminate reflections.
5. Status of Veto Detectors (Bogdan)
   - New 2 cm thick prototype received. Tests beginning.
   - An idea to create new, thicker veto detectors was discussed. Working with Eli from Short Range Correlations, if we supply the scintillator, Eli's group can produce lightguides.

- An outstanding question is how to orient the veto detectors. Will it significantly minimize dead-time by skewing the two layers, or is orienting them parallel ok?

6. Cell Rupture Tests (Todd)

   - The object of the tests is to look for damage to the beamline beryllium windows from exploding glass cells:
     - There are 10 glass cells with geometry similar to the real polarized target cells. They can be pressurized and then broken.
     - A 1-2 mil thick Al protection window is then mounted in a frame in front of a Be (2 mils) window, which simulates the beamline window.
     - The test cell is then ruptured and then you look for window damage from the glass shards.
     - Various protective windows will be tested.

7. Cell Development (Gordon)

   - A flat windowed pumping chamber will allow an increase of the target polarization, so Gordon is working with Tom Gentile from NIST to investigate their flat window production and see if it can be modified to be used in our target.
   - Differences in the proposed G_E^n target from the current polarized ^3He target:
     - Larger volume pumping chamber to accommodate more laser power
     - Larger transfer tube to "beam cell"