

Charge to the Review Committee of HPS SVT and SVT-DAQ projects

Thank you for agreeing to review SVT and the SVT DAQ Projects (SVT&DAQ) of Heavy Photon Search (HPS) experiment. It is expected that electron beams for HPS engineering run in Hall-B will be available early October-November of 2014. The HPS collaboration aims to have detectors installed and ready for commissioning with beam in October of 2014. In your review, please evaluate how ready the SVT&DAQ Projects are to move forward to the construction phase, and towards the installation at JLAB by September'14.

Specific aspects of the project that must be addressed are:

General questions to be addressed but both sub-systems

1. **Are the engineering design together with the procedures for signoff before construction ready?**
2. **Are there remaining issues in the project that require additional R&D and/or design changes?**
3. **Are the interfaces with the other sub-system sufficiently understood, e.g. Beamline, Slow Control, Interlocks, TDAQ.**
4. **Has a quality assurance plan be developed and put in place?**
5. **Does the team have an updated schedule that allows the installation of the SVT&DAQ in September'14?**
6. **Can the project adequately justify the costs toward the installation in September'14?**

SVT Specific

1. **Is the detector able to operate smoothly and safely in proximity of the electron beam, without interfering with the normal machine operation? Are there protections in place to prevent the beam hitting the detector?**
2. **Is the radiation damage on the sensors and the near-beam components sufficiently understood?**
3. **Is the detector able to handle the large background during the Electron runs?**
4. **Are the hardware and software alignment procedures sufficiently understood?**

SVT DAQ Specific

- 1. Did the project developed plans for High Trigger rate tests? Did you consider alternative solutions if the test does not prove to be successful?**
- 2. Is design of the Front-End Boards in-vacuum sufficiently understood? Is there enough space? Which are the additional requirements for the cooling system?**
- 3. Is an R&D program of the feed-through boards in place? Does the solution address the reliability issues of the interconnections?**
- 4. Is the radiation damage an issue for the Front-End Boards close to the beam?**
- 5. Are the interfaces for the integration with the HPS TDAQ agreed?**
- 6. Does the project have the appropriate level of integration and synergy with the Software group?**

Your advice on the review of the SVT&DAQ Project is greatly appreciated.