FY07 ILC Statement of Work – WBS 3.3.3.4 Cs in niobium gun test

Work to be accomplished in FY07

This will be the first year of a 2 year R&D program to test the use of a cesium containing photocathode, specifically Cs-GaAs in an SRF photoinjector to determine if the cathode survives in the injector and if the injector survives being exposed to this type of cathode. This will include devising a method of measuring performance of the photocathode in the injector, measurements of the Cs emitted into the injector, and injector performance with and without the Cs-GaAs photocathode, as well as before and after exposure.

Relevance to the FY07 goals of the ILC Global Design Effort

The early determination of the feasibility of using a Cs-GaAs photocathode in an SRF photoinjector is a critical element of the R&D on a superconducting RF photoemission gun to deliver polarized electron bunches at low emittance for the ILC.

Key Milestones/Personnel

Design of relevant tests	Mar 07
Assimilation of all other key components for testing in FY08	Sep 07

WBS work leader Andrew Burrill, BNL

FY07 Deliverables

A List of tests to be performed and measurements that will be made to quantify contamination level in the photoinjector as well as lifetime study of the photocathode in the photoinjector.

Cost

Labor FTE's	Labor $K Direct	M&S $K Direct	Indirect costs $K		Total Costs $K
0.08	12		6		18