**Task Description**

The battery stack is a complex system of heat and load spreaders, batteries, and connecting hardware. It was designed by Phil Piper with adherence to the rules and ease of fabrication in mind. Yet it will be difficult to fabricate. You will be given the engineering documents (soon to be on SVN) describing the stack design and required tolerance. From these drawings, you must design and test the fabrication techniques required to construct each stack. Following the research phase, you with supervision from Phil (**the batteries are full of energy and thus very very dangerous and Phil knows the most about this and has amazing attention to detail**) will begin stack assembly. The project should be done quickly; ideally the research process should take about 1 to 2 weeks so that you and Phil with support from others can begin stack assembly October 18th, completing the last stack on the 16th of November.

**Responsible Parties**

Bryan will act as project lead. He will plan the research, testing, and fabrication process. He will direct Kai Dougan and other team members. He will receive safety training and help from Phil.

**Deliverables**

The developed techniques will be reported to Phil. Using these proven techniques, Bryan will begin stack fabrication with Phil and other teammates. The first stack should be assembled by early November. At that point, Bryan and the supporting teammates will continue fabrication, but Phil will step out and focus on other Engineering challenges. The last stack and supporting research and fabrication documentation will be delivered on November 16th.

**Budget**

3105 Aluminum Foil, 0.012" Thick, 20" Wide, 10' Long **$37.50**

Poron Foam **Free**

Weather-and-Fire-Retardant Neoprene, Firm, 1/16" Thick, 42" x 72" **$16.06**

Weather-and-Fire-Retardant Neoprene, Firm, 1/4" Thick, 42" x 72" **$56.92**

Total: **$110.48**

Modified Total, taking into account we need to buy the foil in flat sheets (hopefully from a local manufacturer): ~**$150**

**Resources (human and machine)**

Discussion with Joe Belter (regarding laser-cutter access for foam manufacturing)—0.5 hours

Machining and manufacturing with Nick Bernadino (likely to take place in Gibbs machine shop)—15+ hours

Assembly—5 hours

Trip to local sheet metal shop for purchasing—2 hours

**Time to complete**

4 weeks to complete full stack fabrication (November 16th deadline)

**Measures of Success**

Precision of manufactured elements

Timely completion of task

**Required Inputs**

none