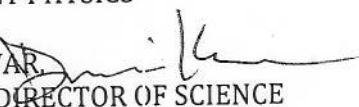




**Department of Energy**  
Washington, DC 20585

May 27, 2010

MEMORANDUM FOR: MICHAEL PROCARIO, DIRECTOR  
FACILITIES OPERATIONS DIVISION  
HIGH ENERGY PHYSICS

FROM: DENNIS KOVAR   
ASSOCIATE DIRECTOR OF SCIENCE  
For HIGH ENERGY PHYSICS

SUBJECT: Request to conduct a Review of the Muon Accelerator R&D Proposal.

A collaboration of national laboratories, universities, and small businesses has submitted a proposal to carry out a program of R&D to demonstrate the feasibility of a muon collider. I request that you organize a merit review of this proposal to determine if it is suitable for funding. This proposal is a response to the recommendation made by Particle Physics Project Prioritization Panel (P5) in its ten-year roadmap submitted in 2008. The relevant recommendation is:

*The panel also recommends R&D for alternative accelerator technologies, to permit an informed choice when the lepton collider energy is established.*

And in the detailed discussion before this recommendation the muon collider was explicitly mentioned as one of the alternatives.

*Finally, a muon collider may be an effective means to reach multi-TeV energies... Recent studies using a jet of mercury in a strong magnetic field have demonstrated that such a target is capable of surviving a four-megawatt proton beam. This first step toward providing muons is very encouraging. The next step is the demonstration of cooling using a combination of ionization energy loss and dispersion in a low-energy, low-frequency acceleration system. Support for R&D for this program has been very limited. Demonstrating its feasibility or understanding its limitations will require a higher level of support.*

The required criteria for all DOE merit reviews are:

- Its scientific and technical merit;
- Appropriateness of the proposed method or approach;
- Competency of applicant's personnel and adequacy of proposed resources;
- Reasonableness and appropriateness of the proposed budget;



In addition, you should seek the evaluations of the merit reviewers on these questions.

- Does the proposal devote appropriate effort to demonstrating that the most critical technical issues to building a muon collider or neutrino factory can be solved?
- Are there clear milestones that can be used to track progress of the R&D?
- Is there a management structure in place capable of evaluating progress, setting priorities, and making changes in response to unexpected results and new discoveries?

Please conduct this review by August 2010 and deliver a report to me by September 30, 2010.

cc: LK Len  
Bruce Strauss