



Department of Energy

Washington, DC 20585

FEB 15 2013

MEMORANDUM FOR LK LEN

FROM: GLEN CRAWFORD, DIRECTOR 
RESEARCH AND TECHNOLOGY DIVISION
OFFICE OF HIGH ENERGY PHYSICS

SUBJECT: General Accelerator R&D Subprogram

The General Accelerator R&D subprogram, comprising the two subprograms formerly known as Accelerator Science and General Accelerator Development, supports the Department of Energy High Energy Physics (HEP) mission by fostering fundamental research and development in the science and technology of particle accelerators. This subprogram nurtures the technologies needed to design and build the future accelerator facilities that will be used to carry out the HEP research program, thereby advancing our strategic goals for science.

This letter is to request that you conduct an onsite review of HEP-supported laboratory research efforts in the area of General Accelerator R&D during the period of March 6–12, 2013. The purpose of this review is to assess the quality and impact of the recent scientific achievements by these research groups, and the feasibility, relevance and impact of the proposed research on achieving the scientific goals and milestones of the HEP mission. Your panel is also asked to review the operation of user/test facilities at each laboratory, including reliability, facility up-keep and improvement, cost effectiveness, and how well its users are being served. *For each laboratory's General Accelerator R&D research group*, we request a specific evaluation of:

1. The quality and impact of the research by the group in the past four years.
2. The scientific significance, merit, and feasibility of the proposed research in the next four years.
3. The competence and future promise of the group for carrying out the proposed research.
4. The adequacy of resources for carrying out the proposed research, and cost-effectiveness of the research investment.
5. The quality of the support and infrastructure provided by the laboratory.
6. How the group benefits the laboratory's experimental program (as applicable), and how well the group's research activities relate to the overall HEP mission.
7. Where user/test facilities exist, the reliability and cost effectiveness of operation, how well its users are being served, and how the facility's capabilities contribute to the overall HEP mission.



The research efforts should be presented in terms of the laboratory group's contributions (as applicable) along the following programmatic thrust lines:

- Accelerator and Beam Physics
- Particle Sources, Beam Instrumentation & Controls
- Novel Accelerator Concepts
- RF Sources and High Gradient Accelerating Structures
- Superconducting Magnets and Materials
- Superconducting RF
- Test Facility Operations

The laboratories should provide information in this format on both their accomplished and proposed research in advance of the review, including the level of effort for each thrust line (FTEs and funding).

The final report should outline the laboratory-based General Accelerator R&D program in each of these thrust lines and discuss the unique and important elements that the laboratory programs bring to bear in addressing these research topics. *In this context, we request a comparative assessment of each laboratory's overall performance in these areas relative to its peers, as well as an assessment versus comparable university groups.* The overall evaluation of the laboratories' research will be an important input to the process of optimizing resource allocations within the various research thrusts.

The HEP General Accelerator R&D program supports a wide range of research thrust areas that are important to HEP needs, both in the mid- and long-term time scales. As part of this review, we are also requesting the reviewers to provide additional general findings and comments about the current status and future promise of the programmatic thrust areas listed above, for example:

- What are the expected deliverables of this research thrust in the next 5–10 years?
- Are adequate resources in place to plausibly achieve these goals?
- Do the laboratories have sufficient technical and management infrastructure to reliably deliver the goals for this programmatic area and respond to new developments?
- What would be the benefit of additional investments in this particular thrust?
- What are the likely impacts of reduced investments?

I encourage you to interact with the laboratory groups at the review and provide them with whatever immediate feedback you find appropriate. Upon the completion of the review, reviewers should each separately send a letter summarizing their findings and evaluations, including their overall findings on the General Accelerator R&D thrusts, an assessment of laboratory contributions to these thrusts, and the individual laboratory evaluations. The letters will be confidential within HEP.

Individual laboratory evaluations, along with the findings on each research thrust, and assessment of laboratory contributions thereto, will be incorporated into a summary report. Since I would like to receive the draft individual laboratory evaluations and the summary report from you no later than May 1, 2013, individual letters from the reviewers should be provided to you by no later than April 1, 2013.

Thank you for taking on this important task.

cc: J. Siegrist, DOE
M. Procaro, DOE
H. Weerts, ANL
D. Lissauer, BNL
S. Gourlay, LBNL
S. Henderson, FNAL
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