

United States Government

Department of Energy

memorandum

DATE: November 30, 2022

REPLY TO
ATTN OF: Office of Nuclear Physics, SC-36

SUBJECT: Project Review of the Electron-Ion Collider project (EIC)

TO: Kurt Fisher, Director
Office of Project Assessment, SC-23

I request your Office organize and conduct a Department of Energy (DOE) Office of Science (SC) Independent Project Review of the Electron-Ion Collider project (EIC) at Brookhaven National Laboratory (BNL), for both in-person and remote participation, January 31 to February 2, 2023. The purpose of this review is to determine how well the project has advanced its plans, research and development, and designs.

On June 29, 2021, the acting Under Secretary of Science and Energy approved CD-1, Approve Alternate Selection and Cost Range, for the EIC, having selected strong hadron cooling and a cost range of \$1.7 billion to \$2.8 billion. The EIC will enable scientists to investigate and answer questions about the basic building blocks of nuclei and how quarks and gluons, the particles inside neutrons and protons, interact dynamically via the strong force to generate the fundamental properties of neutrons and protons, such as mass and spin. In carrying out its charge, the review panel is requested to consider the following topics:

1. Is risk planning comprehensive given the project's current stage of development? Are R&D and design efforts yielding sufficiently advanced designs and mitigating technical risks, particularly in strong hadron cooling? Are technical issues appropriately and proactively being addressed?
2. Is the project properly managed? Is the plan to attain CD-3A and CD-2 thereafter clear, justified, and credible and is the project team effectively executing the plan? Are roles and responsibilities understood? Does the project have sufficient staff?
3. Is the project on a path to successfully realize the expected international in-kind contributions to both the accelerator and detector?
4. Is the project making adequate progress developing the performance baseline? Is the scope defined well and logically? Are the proposed CD-3A long-lead procurements appropriate and progressing adequately toward final design?
5. Are the cost and schedule estimates credible given the project's current stage of development? Do they include adequate scope, cost, and schedule contingency?
6. Is environment, safety, and health (ES&H) and quality being properly addressed given the project's current stage of development?
7. Has the project satisfactorily addressed recommendations from previous reviews?

The EIC Program Manager, Ivan Graff, will work closely with you as necessary to plan and carry out this review. I would appreciate receiving your panel's report within 60 days of the review's conclusion.

On behalf of
Timothy J. Hallman
Associate Director of the Office of Science
for Nuclear Physics

cc:
Alex Bachowski, SC-23
Robert Caradonna, BHSO
James Yeck, BNL