

United States Government

Department of Energy

memorandum

DATE: September 11, 2023

REPLY TO
ATTN OF: Office of Nuclear Physics (NP)

SUBJECT: Long-lead Procurement Critical Decision Review of the Electron-Ion Collider project (EIC)

TO: Kurt Fisher, Director
Office of Project Assessment (OPA)

I request your Office organize and conduct a Department of Energy (DOE) Office of Science (SC) long-lead procurement Critical Decision review of the Electron-Ion Collider project (EIC) at Brookhaven National Laboratory (BNL), for both in-person and remote participation, November 14 to 16, 2023. The purpose of this review is to assess the overall status of EIC to include its technical definition, schedule, cost, management, environment, safety, & health (ES&H), and quality assurance (QA) and to determine if it can successfully request Critical Decision-3A (CD-3A), "Approve Long Lead Procurement."

The EIC project attained CD-1, Approve Alternate Selection and Cost Range, with a preferred alternative of strong hadron cooling and a cost range of \$1.7 billion to \$2.8 billion, on June 29, 2021. The EIC will enable scientists to investigate 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 the project team effectively executing the work? Are technical issues appropriately and proactively being addressed?
2. Are R&D and design efforts yielding sufficiently advanced designs and mitigating technical risks, particularly in strong hadron cooling? Are the proposed CD-3A long-lead procurements appropriate and do they support project risk mitigation? Have the proposed CD-3A long-lead procurements attained final design?
3. Is the project making adequate progress developing the performance baseline? Is the project scope defined well and logically? Are the schedule and cost estimates credible? Do plans include adequate scope, schedule, and cost contingency? Are estimates for the proposed CD-3A long-lead procurements appropriate? Can these procurements be tracked properly?
4. Are ES&H and QA properly addressed given the project's current stage of development?
5. Is the project being properly managed? Are risks being effectively managed? Is a management team in place to successfully execute the project including the CD-3A scope? Are roles and responsibilities documented and understood?
6. Has the project satisfactorily addressed recommendations from previous DOE SC reviews?
7. Is the project ready for CD-3A approval?

The Office of Nuclear Physics Program Manager for Major Initiatives, Ivan Graff, will support you as necessary to plan and carry out this review. I would appreciate receiving the 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-OPA
Robert Caradonna, BHSO
James Yeck, BNL