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date: August 10, 2023

A handwritten signature in black ink, appearing to read "Jim Yeck".

from: Jim Yeck, EIC Project Director/Associate Laboratory Director

# Memo

subject: CD-3A Director's Review of the Electron-Ion Collider (EIC) Project

I request your assistance in conducting a Critical Decision 3A (CD-3A) Director's Review of the Electron-Ion Collider Project at Brookhaven National Laboratory on October 10-12, 2023. The purpose of this review is to assess the EIC Project's design and readiness to meet CD-3A, Long Lead Procurement (LLP) Approval. The charge to the Director's Review committee is based on the expected charge for the Department of Energy's (DOE) Office of Project Assessment (OPA) CD-3A Review on November 14-16, 2023.

The EIC plans to request approval on a CD-3A LLP package estimated to cost about \$100M. DOE CD-3A approval milestone is planned for January 2024. The EIC design continues to mature and the LLP items are completing design reviews. It is anticipated that 80% of final design reviews for the LLP items will be complete prior to the planned CD-3A approval milestone. Robust system engineering processes, a Design Maturity Plan, and Technical Review Plan are in place to ensure sufficient assessment at each phase of design and project implementation.

The Electron-Ion Collider (EIC) is the next generational facility for research in nuclear physics. At the EIC, it will be possible to tackle several key scientific questions in fundamental physics such as determining the 3D structure of protons and nuclei, searching for gluon-saturated matter and solving the mystery of the proton spin. This future facility will be constructed at Brookhaven National Laboratory (BNL), and jointly managed by BNL and Jefferson Lab. The EIC Project secured DOE CD-1, Approve Alternate Selection and Cost Range, approval in June 2021. CD-2 approval is planned for 2025.

The committee is asked to respond to the following CD-3A charge questions:

1. Is the project team effectively executing the work? Are technical issues appropriately and proactively being addressed? Are the proposed CD-3A long-lead procurements appropriate?
2. Are the cost and schedule estimates credible? Do they include adequate scope, cost, and schedule contingency? Are the estimates for the proposed CD-3A long-lead procurements appropriate and can these procurements be properly tracked?
3. Is environment, safety, and health (ES&H) and quality being properly addressed given the project's current stage of development?
4. Is the project being properly managed? Are risks being effectively managed? Is the management team in place to successfully execute the CD-3A scope?
5. Is the project appropriately addressing the recommendations from the prior DOE SC reviews?
6. Is the project ready for CD-3A approval?

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CC: L. Lari  
J. Fast