



Department of Energy
Office of Science
Washington, DC 20585

June 7, 2021

MEMORANDUM FOR: KURT FISHER
DIRECTOR, OFFICE OF PROJECT ASSESSMENT
OFFICE OF SCIENCE

FROM: LINDA L. HORTON
ASSOCIATE DIRECTOR OF SCIENCE
FOR BASIC ENERGY SCIENCES
OFFICE OF SCIENCE

SUBJECT: DEPARTMENT OF ENERGY REVIEW OF THE
SPALLATION NEUTRON SOURCE (SNS) PROTON
POWER UPGRADE (PPU) LINE ITEM CONSTRUCTION
PROJECT

With this memo, the Office of Basic Energy Sciences (BES) requests that your office organize and conduct a virtual Independent Project Review (IPR) of the PPU project at the Oak Ridge National Laboratory on September 14-17, 2021. The purpose of this review is to assess project's status and progress since the CD-2/3 IPR in July 2020.

The PPU project Critical Decision-2 (CD-2) and CD-3 were approved on October 6, 2020, establishing the Total Project Cost of \$271,567K, and the CD-4 date of July 31, 2028. The PPU project will double the accelerator power capability from 1.4 megawatts (MW) to 2.8 MW, providing increased proton beam power for the First Target Station to operate at up to 2.0 MW and sufficient added capacity for the future Second Target Station.

In carrying out this charge, the review committee should respond to the following questions:

1. Technical: Are the accomplishments to date and planned future activities consistent with the approved baseline plan? Are the technical challenges, including the test target performance issues, being properly addressed, and is the remaining design progressing per the baseline plan? Are major technical risks and interfaces well understood and being managed to mitigate related impacts?
2. Procurement: Are the phased procurement plans and associated contracts progressing satisfactorily to support the activities per the approved baseline? Are the procurements being effectively monitored to ascertain and react to supply chain issues and delays caused by material and labor shortages and the COVID-19 pandemic?

3. ES&H/QA: Are Environment, Safety, and Health and Quality Assurance (ES&H/QA) requirements and plans, including COVID-19 protections and safety measures, being properly implemented?

4. Cost and Schedule: Are the cost, schedule, and performance metrics being properly collected and reported? Are major cost and schedule assumptions, resource constraints, and project risks, as well as COVID-19 uncertainties being adequately addressed?

5. Management: Is the project being properly managed and staffed to successfully deliver the scope and Key Performance Parameters within the baseline cost and schedule? Are the external interfaces, in particular with the SNS operation and maintenance periods, identified and managed? Are the major project risks, including COVID-19, captured in the risk registry and are the mitigation plans reasonable and effective? Is there a contingency management plan for potential scope and capability enhancements? Is the planning for the transition to operation adequate for this stage of the project?

6. Recommendations: Have the CD-2/3 review recommendations been appropriately addressed, or on schedule for completion? Are there any outstanding recommendations from the prior DOE SC reviews?

Hannibal Joma, the PPU Program Manager, will serve as the BES point of contact for this review. We would appreciate receiving the committee's report **within 60 days** of the review conclusion.

cc: J. Moore, OSO
W. Cain, OSO
K. Andersen, ORNL
J. Galambos, ORNL
M. Champion, ORNL
E. Merrill, SC-23
C. Clark, SC-23
H. Joma, SC-32.3
E. Stevens, SC-32.3
P. Thiyagarajan, SC-32.3
V. Nguyen, SC-32.3
T. Russell, SC-32
R. Meneses, SC-32.3
L-A. Kiser, ORISE
P. Hudson, ORISE