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Director's Office

November 14, 2012

Robert Tschirhart
FNAL

Dear Robert,

Thank you very much for your presentation "*PX Stage 1 Physics Case: Preparations for Snowmass*" at the October meeting of the Fermilab Physics Advisory Committee (PAC). The Committee explicitly mentioned its appreciation of the time and effort required of the proponents and presenters to prepare the materials for this PAC meeting.

Attached are the relevant parts of the PAC document that summarize their Comments and Recommendations.

As you see, the Committee "*... commends the proponents on the clear articulation of the physics case for Stage 1,*" and encourages the proponents to submit detailed documentation of the physics case to the Snowmass meeting. The PAC noted that: "*Coordination with the nuclear physics field is encouraged for the definition of the plan for physics topics that touch both particle and nuclear physics interests, such as those involving slow neutrons.*"

I would like to add my appreciation to all those that have contributed to developing the physics case. I look forward to hearing what can be done to strengthen the coordination with nuclear physics in further developing common areas of interest within the Stage 1 physics plan.

Sincerely,

A handwritten signature in blue ink, appearing to read "Piermaria Oddone", with a horizontal line underneath.

Piermaria Oddone

cc:

Y. Kim
S. Henderson
R. Kephart
G. Bock
S. Geer
R. Dixon
V. White
G. Apollinari

C. Hogan
M. Lindgren
P. McBride
R. Roser
V. Shiltsev
C. Strawbridge
S. Ritz

J. Siegrist
M. Procaro
G. Crawford
A. Stone
J. Whitmore
D. Levy
S. Beering
S. Holmes

Excerpt from Physics Advisory Committee Comments and Recommendations, October 2012

As discussed at the last PAC meeting, budgetary constraints have led to the need for a staged approach to Project X. The first stage will feature a new superconducting 1 GeV linac, to replace the aging 400 MeV linac in the Fermilab accelerator complex. A more fully developed physics case for the first stage was previously requested by the PAC for this meeting.

The PAC received a document and heard a presentation describing the physics opportunities with Stage 1 of Project X. The physics case for the first stage is being developed over a wide range of topics at the intensity frontier, including the use of neutrinos (for oscillation studies), muons (extending the sensitivity of g-2 and Mu2e), kaons (for the ORKA rare decay program), hadronic physics (with potential for new experiments studying QCD), and searches for neutron EDMs, as well as nuclear energy applications.

The PAC commends the proponents on the clear articulation of the physics case for Stage 1. The breadth of the program is impressive. The staged approach to Project X should provide the opportunity for the first stage to proceed in a timely manner. Coordination with the nuclear physics field is encouraged for the definition of the plan for physics topics that touch both particle and nuclear physics interests, such as those involving slow neutrons. A well-focused R&D program is required for a number of the proposed experiments. The proponents are encouraged to submit detailed documentation of the physics case to the current Snowmass process.