NATIONAL SCIENCE FOUNDATION
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Division of Physics
Directorate for Mathematical and Physical Sciences

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Prof. Anders Ryd
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Dear Dan and Anders:

Because the CMS Operations Award ends December 31, 2016, I am writing to provide guidance to you in preparing a proposal to support operations for the subsequent five-year period. The scope of the next NSF operations proposal will be more complex than the current one because of the overlap of the next five-year award period with operations during Run 2, installation and commissioning of the Phase-1 upgrade following the completion of Run 2, and the anticipated NSF support for planning for the Phase-2 upgrade that will take place concurrently.

We would like to suggest the following scope for the operations award, and we would welcome a discussion with you about this prior to your undertaking the preparation of the proposal in order to ensure that we have common expectations of what should be encompassed within the scope of the award:

a. Detector maintenance and operation through the remainder of Run 2, concluding mid-2018
b. Installation and commissioning of the Phase-1 upgrade during Long Shutdown 2, 2018 – 2020
c. Support for LHC Run 3 operation from the scheduled run start in Q2 of calendar year 2020 through January 31, 2021
d. Software and computing support

e. Maintenance of the collection of experimental data and open data dissemination
f. Conduct of education and public outreach activities

We would like to hear your thoughts regarding the best approach for providing NSF funding for Phase-2 planning in the Preliminary and Final Design phases, 2017 – 2020, as well as the completion of remaining enabling R&D that may be needed prior to commencing Phase-2 construction (whose funding is conditional of course, on NSB approval for this course of action). We think the preferred approach would be for NSF-supported Phase-2 planning activities to be coordinated under the leadership of the NSF Phase-2 POC lead institution in a single award rather than split into two separate awards, as this split could diminish flexibility to adapt to unforeseen circumstances in either Phase-2 planning or operation that might require budget reallocation.

We would also like to make some specific recommendations regarding the how we would like to see the material in the next Maintenance and Operations proposal presented to NSF:

1. Please present the intended scope of work using an operational Work Breakdown Structure (WBS) so that the narrative describing the technical scope in each WBS areas is accompanied by an activity-based budget and a basis of estimate. The WBS should be cross-walked to the proposed subawards and the scope of activities within each subaward.

2. The proposal should describe the awardee's intended role in oversight of subawardee performance.

3. Describe the plan for managing risk, including technical, financial, and schedule risk in each of the activity areas.

4. The proposal should describe technical performance measures or goals for the first year of the new award, and the process planned for evaluation of variances and for providing feedback to Management to implement a process of continuous improvement during subsequent years of operation.

5. Describe property and data stewardship plans – these can be simple refreshes to existing plans and need not be rewritten unless you choose to do so.

6. Describe plans for risk reduction, detector improvement, and next-generation detector research. These descriptions should be part of the narrative, where they fit, within each WBS area.

7. Describe plans for assessment and evaluation of the effectiveness of educational outreach activities and the means by which the assessment will be fed back as part of a program of continuous improvement.

We would like to suggest the following tentative timeline for proposal preparation and evaluation, and would like to have your feedback regarding this:

1. January 8, 2016 - Receive proposal at NSF

2. April 1, 2016 - Written reviews complete
3. May 2016 - Panel review, avoid collision with annual DOE/NSF ops review
4. July 2016 - Award analysis and recommendation at Physics Division level
5. September 2016 - MPS internal review
6. November 2016 - Decision to fund and preparation of new Cooperative Agreement
7. January 1, 2017 - New operations award begins

I look forward to your feedback.

Best regards,

Mark Coles
Senior Advisor for Facilities Development and Management
Division of Physics

Cc:
Denise Caldwell