



MOLLER Collaboration Meeting



Status Report

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Current Snapshot of MOLLER

◆ The MOLLER construction project HURTLING towards CD-2/CD-3

- ★ All MIE funding is in hand
- ★ DOE/NSF/CFI efforts intimately connected; final schedule meshing is in progress
- ★ Successful CD-3A review... extraordinarily intensive effort last Fall
- ★ Even more effort currently as all activities scrubbed and ensure nothing is left out

◆ Final stages of Engineering Design

- ★ The last 12 months has seen a good rhythm of meetings (engineers and physicists)
- ★ The 90% to 100% stage has stretched out; design meetings must start phasing out

◆ Continued Intense Simulation Efforts of the Physics collaboration

- ★ We are successfully handling a turnover of manpower and incorporating new people

Towards Technical “Completeness”

- ◆ **Everything is being simulated!**
 - ★ Collimation tweaks (finally subsiding!), radiation load, shielding, ferrous materials....
- ◆ **Spectrometer subsystem has pivoted to acquisitions**
 - ★ The 90% to 100% transition is particularly intense because...
 - ★ Large mount of CD-3A scope acquisitions are ongoing
 - ★ Prototype coils are here and being evaluated
- ◆ **Major activities on all detector systems**
 - ★ Electronics, large mechanics, individual module details, prototypes, simulations...
- ◆ **All other subsystems (infrastructure, target, installation...) essentially are very close to a complete plan as required for CD-2**

The bulk of the presentations will focus on this progress

3 tracks are emerging for 2023-24

◆ **The Project (MIE, NSF, CFI)**

- ★ Lining up all tasks (cost/schedule/risks/contingency) to achieve CD-2/CD-3
- ★ Developing and executing complete plan from construction to installation to KPP's

◆ **The Collaboration as a whole supporting the Construction Project**

- ★ Complete any tasks from physics recommendations in previous reviews and provide appropriate physics manpower to ensure physics requirements will be met
- ★ Prepare to line up manpower for evaluating acquisitions and assisting installation
- ★ Start planning to ensure we will be authorized to install, commission and run physics with the apparatus being built (ERR process etc...)

◆ **Start the Pivot towards Commissioning and Physics**

- ★ This Fall, start the process similar to how we prepared for PREX/CREX most recently of developing the online and offline software framework and start run planning...

Some Perspective

2023: CD-2/CD-3
2024: Construction
2025: Installation
2026: Physics

My quote from the June 2022 Collaboration meeting, when Jim was warning us that MOLLER might be delayed due to lack of Fiscal 2023 funding

◆ **The vagaries of DOE funding are not relevant for this time period**

★ NSF and CFI can proceed with acquisitions once final technical designs are reviewed

★ Our responsibility is to be poised to take advantages of sudden injections of funding

We are in a similar situation now: this time with Hall A scheduling

◆ **The vagaries of JLab scheduling not relevant for 2023-24 planning**

★ Our responsibility is to assume the most optimistic access to the Hall possible and work towards being ready to take advantage of the latest schedule

★ This means that we must sufficiently advance all subsystem acquisition/construction by mid-2024 such that Lab management feels comfortable that we will be ready on time (some of this will be required for the ERR process anyway)

★ Our planning MUST build this “demonstration aspect” into our schedule

★ Note: NSF and CFI do not have to wait until early 2024 to obligate construction funds

Thanks to Jim Fast

- ◆ **It is fair to say that we could not have achieved the CD gates and the required funding without Jim's extraordinary stewardship of the MOLLER MIE**
- ◆ **Jim has decided to accept the Lab's call to help steward the JLab EIC project**
- ◆ **We expect Jim to continue to assist and advise us until we are through the CD-2/CD-3 Gates**
- ◆ **We welcome Jim to bring his invaluable experience beyond that as a senior physicist in the collaboration**

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