

FRIB PROJECT

UPDATE FOR USERS

JANUARY 2014

Marching Toward Technical Construction (CD-3b)

Story Contributed by Thomas Glasmacher, Project Manager

On January 22, 2014, FRIB received official notice from the Department of Energy Office of Science (DOE-SC) that we can now begin civil construction. This notice comes after a federal appropriations bill was signed the week before including \$55 million to support construction of FRIB.

We take seriously the trust placed in us by the DOE-SC and the nuclear science community, and will work hard to deliver the aspirations of the FRIB users. The start of civil construction of the FRIB conventional facilities is scheduled to begin in early spring.

Final design of the technical systems—accelerator and experimental equipment—is underway and scheduled for completion in summer 2014. Technical construction is scheduled to begin in fall 2014 after the DOE-SC Office of Project Assessment review for CD-3b, which will be held June 24-26.

Throughout the spring, the FRIB project team will hold meetings of the Experimental Systems Advisory Committee (ESAC) and the Accelerator Systems Advisory Committee (ASAC) and host technical design reviews. The project will also undergo safety and quality assessments, all leading up to an MSU President's independent review before, finally, the DOE-SC review for CD-3b in June.



FRIB civil construction will begin in early spring



An image of site preparation currently going on at FRIB—taken by a camera mounted on the building directly to the south (facing north)

Follow along with FRIB progress by checking the construction camera at

frib.msu.edu

Successful ESAC/ASAC Reviews Keep FRIB Moving Forward

Story Contributed by Dan Stout, Chief Engineer

In preparation for the upcoming DOE-SC review for CD-3b, both the Experimental Systems Advisory Committee (ESAC) and Accelerator Systems Advisory Committee (ASAC) have reviewed the FRIB project team's progress and found technical design to be on-track for substantial completion in summer 2014, according to plan.

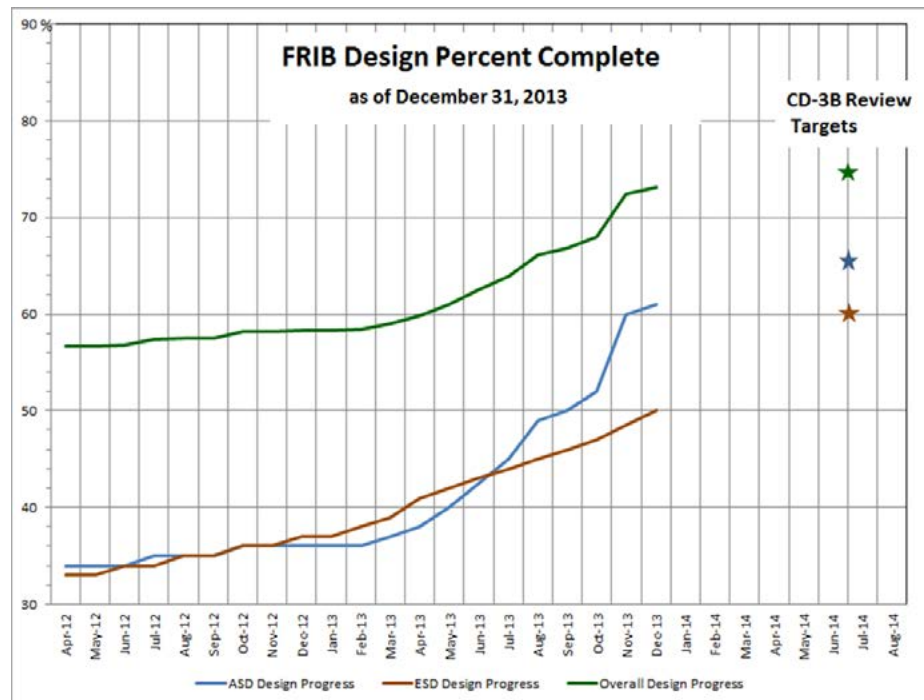
ESAC, chaired by Jay Marx from the California Institute of Technology, and ASAC, chaired by Satoshi Ozaki from Brookhaven National Laboratory, are both comprised of practitioners from around the world who also have experience delivering one-of-a-kind science projects.

Both committees held multi-day reviews where they listened to presentations and engaged in conversations about the design and plans for construction of the technical equipment that will make up FRIB.

- November 19, 2014, ESAC found, "the quality of the evolving design is very high and should support successful construction of the experimental systems for FRIB."
- December 10, 2014, ASAC found that the design was, "well-advanced," and, "on-track to reach the goal by CD-3b review."

According to FRIB tracking of the goals in the final design plan, technical design has reached 70 percent completion and is on-track for the goal of 75 percent completion for the DOE-SC review for CD-3b in June.

FRIB design tracking shows the FRIB Project (green line) nearing the CD-3b review target



FRIB Users Will Participate in August Low-Energy Community Meeting

Story Contributed by Brad Sherrill, FRIB Laboratory Chief Scientist

FRIB users will participate in the 2014 Low-Energy Community Meeting to be held August 21-23 at the Mitchell Institute on the campus of Texas A&M University.

Community meetings offer an important opportunity for FRIB users to develop collaborations and further equipment plans. With the start of FRIB construction and a possible NSAC Long Range Plan in the near future, we anticipate that most of the FRIB working groups will hold working group meetings at this time.

A significant part of the meeting will be set aside for these activities. If your group would like to hold a working group meeting as part of the larger community meeting or if you would like to hold a satellite workshop, please contact [Brad Sherrill](#) or any member of the organizing committee.

Contact information can be found at the [FRIB users group website](#) or at the [community meeting website](#).

We look forward to seeing you in College Station this August.

Accelerator Science Conferences and Workshops Coming to MSU and Michigan

Story Contributed by Jie Wei, Accelerator Systems Division Director

The 54th ICFA Advanced Beam Dynamics Workshop on High-Intensity and High-Brightness Hadron Beams ([HB2014](#)) will be held in East Lansing November 10-14, 2014. Topics of discussion at this conference will include beam physics, linear and circular hadron machines, technical systems, and accelerator projects around the world.

In 2016, MSU and FRIB will host the biennial gathering of the worldwide community of linear accelerator specialists at the 28th Linear Accelerator Conference, LINAC16. This conference will provide a unique opportunity to hear about the latest advances and developments for projects concerning hadron and lepton linacs, as well as applications for each.

The 2019 NA-PAC conference of the Institute of Electrical and Electronics Engineers (IEEE) will also be held in Michigan.

This March 2014, FRIB will also host a two-day workshop on machine protection systems for high-power, superconducting hadron colliders.

Watch the FRIB website, frib.msu.edu, for updates and more information as it becomes available.

Rare Isotope Beam Experiments with ReA3

Story Contributed by Daniela Leitner, NSCL Associate Director of Operations

In August 2013, the ReA3 reaccelerator passed a major milestone when the first radioactive ion beam was delivered to the low-energy ReA3 experimental hall.

In a five-day non-stop experimental run of beam operation, a Potassium-37 beam was delivered from the coupled cyclotron facility to the momentum compression line in the N4 vault, stopped in the linear gas cell, charge bred to 17+, and delivered to the target station at an energy of 2.2 MeV/u using the first two ReA cryomodules.

In addition, the remaining two beam lines in the ReA3 low energy hall will be commissioned and a third cryomodule is currently being assembled and will be installed in the spring. The beam commissioning of the third cryomodule will mark the completion of the ReA3 project and allow the facility to provide rare isotope beams with energies up to 6 MeV/nucleon for light ions and 3 MeV/nucleon for heavy ions.

A call for proposals for experiments using the ReA3 accelerator has been issued and will be considered at the next meeting of the NSCL Program Advisory Committee (PAC 38) to be held April 14–15, 2014. Further information about the ReA3 proposal process and deadline can be found at the NSCL website, nscl.msu.edu.

Looking Ahead for FRIB Project

- April 1, 2014 – Planned start of civil construction
- April 23-25 – MSU President's independent review to assess readiness for CD-3b
- June 24-26 – DOE-SC Office of Project Assessment review for CD-3b readiness
- August 21-23 – FRIB Users at the Low-Energy Community Meeting at Texas A&M

For more FRIB News and Events, please visit frib.msu.edu.

Chinese Academy of Sciences Delegation Visits FRIB



This past December, FRIB hosted a delegation from the Chinese Academy of Sciences (CAS) and Institute of Modern Physics. Vice President Wenlong Zhan, leader of the seven-member delegation, delivered a seminar on "Research of Nuclear Physics and Material at CAS." While in the U.S., the delegation also visited Argonne National Laboratory, General Atomics, and Lawrence Berkeley National Laboratory.