

Charge for the Technical Design Review of the Mu2e Resonant Extraction System

August 25-26, 2015

The Mu2e project has recently received CD-2/3b approval from the DOE (March 2015). The project is in the process of completing the final design and preparations for a CD-3c DOE review in early CY-2016. External peer reviews of key technical elements of the project are a part of this process. Resonant extraction from the Delivery Ring is an essential part of the beam delivery to the experiment. It has tight requirements on the delivered beam quality and it must provide a very high extraction efficiency to minimize the radiological hazard. The Mu2e project management would like the committee to review and comment on the current technical design of Mu2e Resonant Extraction system. In particular, the committee is asked to address the following questions:

1. Is the technical design of the Mu2e Resonant extraction technically sound? Have all the principle issues of the extraction process been appropriately evaluated, simulated, and calculated? Are all of these issues properly addressed in the design?
2. What are the technical risks of the design? Have all of the technical risks associated with Mu2e resonant extraction been accounted for? Have these risks been properly evaluated and mitigated?
3. Is the technical design of the Electrostatic septum mature enough to start the pre-production prototyping?
4. Is the scope of the Resonant Extraction subproject adequate to meet the requirements?
5. Is the technical design of the Mu2e Resonant Extraction system on track to satisfy the requirements for a DOE CD-3 review in early CY 2016?

The review is scheduled for August 25-26, 2015 with presentations and discussions during the first day; additional questions from the committee in the morning of the second day and executive session in the afternoon of the second day. The committee is requested to submit a report containing its answers to the charge questions and its recommendations to the Mu2e Accelerator project manager within two weeks after the conclusion of the review.