

# Charge for the Technical Design Review of the Delivery Ring RF

November 19, 2015

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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.

The Delivery Ring 2.5 MHz RF System is essential to the operation of the Mu2e experiment. The purpose of the Delivery Ring RF system is to produce an efficient transfer of beam from the Recycler and to preserve a 250 ns bunch structure in the Delivery Ring.

Much of the Delivery Ring RF system is being fabricated on the Recycler RF AIP. The Mu2e project is responsible for the low-level system, some longitudinal tracking simulation work, and management effort.

The Mu2e project management would like the committee to review and comment on the current technical design of Mu2e for the portions of the Delivery Ring RF System that are within the scope of the Mu2e project. In particular, the committee is asked to address the following questions:

1. Is the technical design of the Mu2e Delivery Ring Low-Level RF System technically sound? Have all the principle issues of the Recycler to Delivery Ring transfer 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 Delivery Ring RF System been accounted for? Have these risks been properly evaluated and mitigated?
3. In particular, will the Low Level RF System be configurable to accommodate the beam studies necessary for Mu2e commissioning and normal beam operations?
4. Is the technical design of the Mu2e Delivery Ring RF System on track to satisfy the requirements for a DOE CD-3c review in early CY 2016?

The review is scheduled for November 19, 2015 with presentations and discussions during the morning and an executive session in the late morning and early afternoon. The committee is requested to submit a report containing its answers to the charge questions and its findings, comments, and recommendations to the Mu2e Accelerator project manager within two weeks after the conclusion of the review.