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Permanent magnet resiliency in CEBAF's radiation environment: LDRD grant status and plans

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As the FFA@CEBAF energy upgrade study progresses, it is important to investigate the impact of radiation exposure on the permanent magnet materials to be used in the upgraded fixed field alternating gradient (FFA) arcs. To address this, Jefferson Lab has awarded a Laboratory Directed Research and Development (LDRD) grant to study the resiliency of several permanent magnet materials placed in a radiation environment similar to that in which they are expected to operate. Samples of NdFeB and SmCo are to be placed alongside appropriate dosimetry in a variety of radiation environments in the beam enclosure and experimental halls at CEBAF. The magnet degradation will be measured, and extrapolated to the higher energies expected during operations after the energy upgrade. This document will describe the current status of the LDRD study, as well as describe the upcoming plans. It will also direct the readers to other proceedings which further detail the work thus far.

Footnotes

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