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Operational experience with Machine Protection System for high current, high brightness accelerator

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The Low Energy RHIC Electron Cooler (LEReC), the world's first electron cooler utilizing an RF electron accelerator, was designed to operate with 1.6-2.6 MeV electron beams of up to 140 kW beam power. The LEReC successfully worked through RHIC Runs 2019-2021, substantially increasing RHIC luminosity, and has been routinely used for various studies since then. A dedicated, highly configurable Machine Protection System (MPS) is a critical part of the LEReC. This paper summarizes our experience with operating the LEReC MPS.

Footnotes

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