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A new power supply for the pulsed bending magnet in J-PARC 3–50bt

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J-PARC has three accelerators, 400MeV linear accelerator (LINAC), 3GeV rapid cycling synchrotron (RCS), and 50GeV (currently 30GeV) main ring (MR), which are connected by beam transport lines. The proton beam is delivered from the RCS to muon and neutron targets in the materials and life science experimental facility (MLF) via a beam transport line called 3NBT. A pulsed bending magnet in the 3NBT, which is also the first magnet of another beam transport line called 3-50BT, provides 8 bunches of proton beams to the MR. A power supply excites the pulsed bending magnet according to the cycle of MR to deliver the proton beam at the injection timing of MR. In near future, the repetition rate of MR will be higher to increase the output beam power. However, the current power supply of the pulsed bending magnet does not support higher repetitive operation, so we planned to manufacture a new power supply that supports 1 Hz operation. In this proceeding, the specifications of the new power supply, and the measured results of operating tests using dummy loads and the pulsed bending magnet will be reported.

Funding Agency

Footnotes

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Yes

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