

Operational Performance of the ATLAS Electron Beam Ion Source

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An Electron Beam Ion Source charge breeder has been in operation at Argonne National Laboratory since 2017 with delivery of radioactive beams for the ATLAS physics program beginning in 2018. The source has since delivered radioactive beams for several experiments. Single charge state efficiencies have exceeded 20% with the radioactive species accounting for up to 98% of the beam incident on target. At the latter half of 2018, the electron beam collector developed a water to vacuum leak. Scheduling constraints precluded the fabrication of a new collector. Instead, the internal surfaces of the existing collector underwent an electroforming process. This resolved the leak and full performance was reestablished.

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