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Producing Medical Isotopes with Electron Linacs

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The Canadian Light Source (CLS) has been working on a project to develop a facility that uses a 35 MeV high power (40 kW) electron linac to produce medical isotopes. This project was funded by Natural Resources Canada's Non-reactor-based Isotope Supply Program which was initiated following the lengthy shutdowns of the NRU reactor at Chalk River that caused significant shortages of molybdenum-99/technetium-99m isotopes for the medical community. The CLS has been collaborating with the Prairie Isotope Production Enterprise (PIPE) in Winnipeg to develop an entire production cycle from molybdenum targets through to clinical approval by Health Canada of linac-derived isotopes. This talk will outline the reasons for using electron linacs for this application, as well as many of the broader challenges encountered to develop an alternate supply chain for these vital isotopes.

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