

A Reliability Retrospective of an Installed Base of 14 Proton Therapy Centers

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Ion Beam Applications, S.A. (IBA), has produced accelerators for various industrial and medical applications since 1986. Today, IBA is the world leader in the proton therapy (PT) market, with the largest number of installed systems, and IBA has responsibility for the operation and maintenance (O&M) of 14 systems, for a total of 47 treatment rooms in 5 countries.

As an accelerator-based therapy facility, a PT system presents some unique challenges. Typically, the average uptime of the system needs to be above 96% and the longest accepted unavailability is 4 consecutive days. These requirements are critical for the clinical efficiency and the financial sustainability of the therapy center and proper therapy and well-being of the patients. From the O&M perspective, these requirements also make upgrades and maintenance difficult to schedule.

The reliability of the IBA Proteus 235® proton therapy system has increased from 93% to 96% in the previous 5 years due to various efforts concerning the beam lines, ion source, RF cavities and amplifiers, electrostatic deflector and ionization chambers, as well as some items specific to radiation therapy like x-ray imaging and patient positioning.

Acknowledgements

References