For more than two years we have been using the sliding window method of dynamic multileaf collimation (DMLC) to deliver intensity modulated radiotherapy (IMRT). Nearly 200 prostate patients have been treated. During this time we have developed a comprehensive scheme for verifying the accuracy of leaf motion files relative to the dose distributions generated by the treatment planning system and, in conjunction with the manufacturer, the reproducibility of the daily dynamic dose delivery on the treatment machine. These verification tools along with our procedures for DMLC quality assurance (QA) ensure the accuracy of DMLC dose delivery.

The details and rationale for specialized procedures for QA and verification of these treatments will be discussed. Unlike stop-and-shoot methods of IMRT and conventional therapy using MLC, small errors in the leaf gaps, which form the sliding window, can influence the delivered dose significantly. Results confirm that planned doses are delivered accurately. The results of our experiences will be presented.