The purpose of this study is to compare the calculated dose distributions obtained from the NOMOS CORVUS system with independent dose calculations utilizing the ADAC system. An identical set of CT images is used for the study with the alignment point chosen as the reference position. The initial planning is accomplished using the CORVUS MLC-based IMRT system. Segmentations of MLC-based IMRT plans can be visually assessed using the IMPAC system and manually separated into independent beam parameters. This process is extremely laborious and we have developed a script to utilize the RTP files generated by CORVUS. RTP files have detailed descriptions of each beam segment, including MLC jaws, gantry, collimator angles and monitor units. The segmentations of MLC-based IMRT plans from CORVUS system are imported into the ADAC treatment planning system using the script that we developed. The prescription and beam weights are set to reflect the treatment plan calculated by the CORVUS. When all beam dose distributions are summed using the ADAC system, the distributions are similar to that calculated by the CORVUS system. The prescription isodose line closely matched the CORVUS isodose line. However, in a typical case, the ADAC based calculation showed 10% higher hotspot dose. Besides this significant difference, other dosimetric differences dealing with DVH will be discussed. The methodology used involving output factors for small MLC segments is addressed in this work. The development of this approach takes less than an hour for dose calculations using the ADAC system. This process can be used as an in-house dose validation technique for the CORVUS plan.