Promising results from several institutions have led to the opening of an RTOG study using brachytherapy as the sole method of radiotherapy for some early breast cancers. Eligible patients undergo biplanar Ir-192 implants, LDR or HDR. Optimization conditions for biplanar LDR implants have been published previously. The present work gives the corresponding constraints for HDR. Flexible individual dwell times allow a high degree of dose uniformity in planes parallel to the implant planes. In this case optimal biplanar dose uniformity is obtained when the interplanar separation $\boldsymbol{s}$ is related to the target volume thickness $\boldsymbol{t}$ through the simple proportionality, $\boldsymbol{s}=\boldsymbol{t}/2^{1/2}$. This condition ensures that for ideally constructed implants, the dose delivered at the implant center is equal to the dose prescribed at the target surface. For a number of reasons, implants approximating the ideal geometry are not readily achievable in practice. To estimate the importance of catheter placement, a numerical study was carried out examining the average dose and equivalent uniform dose (EUD) inside the prescription isodose surface for a range of suboptimal catheter geometries. In calculating EUD, alpha-beta ratios characteristic of both acute and long term effects were used. The results show that in contrast to the average dose, the EUD is a weak function of catheter misplacement, suggesting that the biological consequences of suboptimal implant geometry may be less significant than is indicated by the increase in average dose.