ABSTRACT. This paper continues the study of best approximation in a Hilbert space X from a subset K which is the intersection of a closed convex cone C and a closed linear variety, with special emphasis on applications to the n-convex functions. A subtle separation theorem is utilized to significantly extend the results in [4] and to obtain new results even for the "classical" cone of nonnegative functions. It was shown in [4] that finding best approximations in K to any f in X can be reduced to the (generally much simpler) problem of finding best approximations to a certain perturbation of f from either the cone C or a certain subcone C_F. We will show how to determine this subcone C_F, give the precise condition characterizing when $C_F = C$, and apply and strengthen these general results in the practically important case where C is the cone of n-convex functions in $L_2(a, b)$.