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This paper consider a convex-composite generalized constraint equation in Banach spaces. Using variational analysis technique, in terms of normal cones and coderivatives, we first establish sufficient conditions for such an equation to be metrically subregular. Under the Robinson qualification, we prove that these conditions are also necessary for the metric subregularity. In particular, some existing results on error bound and metric subregularity are extended to the composite-convexity case from the convexity case. (Received September 01, 2011)