1086-46-593 Teffera M. Asfaw* (tasfaw@mail.usf.edu), University of South Florida, Department of Mathematics and Statistics, 4202 E.Fowler ave., STOP CMC 342, Tampa, FL 33620-5700, and Athanassios G. Kartsatos (hermes@usf.edu). Variational Inequalities for Perturbations of Maximal Monotone Operators in Reflexive Banach Spaces. Preliminary report.

Let X be a real reflexive locally uniformly convex Banach space with locally uniformly convex dual space X^* , and let K be a nonempty, closed and convex subset of X with $0 \in \overset{\circ}{K}$. Let $T : X \supseteq D(T) \to 2^{X^*}$ be maximal monotone and $S : D(S) = K \to 2^{X^*}$ possibly unbounded pseudomonotone, or finitely continuous generalized pseudomonotone, or regular generalized pseudomonotone. Let $\phi : X \to (-\infty, \infty]$ be a proper, convex and lower semicontinuous function and fix $f^* \in X^*$. New results are given concerning the solvability of perturbed variational inequalities involving the operator T + S associated with the function ϕ . The associated range results for nonlinear operators are also given, as well as extensions and/or improvements of known results of Kenmochi, Le, Browder, Browder and Hess, De Figueiredo, Zhou, and others. (Received September 07, 2012)