On reflectors preserving order

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A subcategory $\mathcal{A}$ of a poset enriched category $\mathcal{X}$ is said to be KZ-reflective if it is reflective, the reflector F is locally monotone and the unit η fulfils $\eta_{FX} \leq \eta_{FX}$. The category of algebras of a Kock-Zoberlëin (KZ) monad over $\mathcal{X}$ is of this type. It is easily seen that in an arbitrary category enriched with the trivial partial order (that is, the equality), to be KZ-reflective just means to be reflective and full. We will present some notions and results in the broader context of KZ-reflective subcategories of poset enriched categories which generalize some important well-known properties of full reflective subcategories. This will be illustrated with several examples, mainly in Top_0 and Frm.