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A matrix is called eventually nonnegative (positive) if there exists a positive integer m such that A^k is entry-wise nonnegative (positive) for all $k \geq m$. A matrix is nilpotent if $A^k = O$ for some positive integer k . The study of eventually nonnegative matrices and connections to Perron-Frobenius theory is hindered by nilpotent matrices and matrices which have powers that are reducible with a nilpotent diagonal block. This talk introduces a new class of eventually nonnegative matrices (which we call strongly eventually nonnegative) in order to avoid these issues with nilpotence. We also introduce a generalization of the Perron-Frobenius property in an attempt to extend results on eventually positive matrices to strongly eventually nonnegative matrices. We also characterize the relationships between different classes of eventually nonnegative matrices. (Received February 12, 2010)