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Development of the new trigger for VANDLE neutron detector[1] ADAM HASSE, STEVEN TAYLOR, HADYN DAUGHERTY, ROBERT GRZYWACZ, Univ of Tennessee, Knoxville — Beta-delayed neutron emission (βn) is the dominant decay channel for the majority of very neutron-rich nuclei. In order to study these decays a new detector system called the Versatile Array of Neutron Detectors at Low Energy (VANDLE) was constructed. A critical part of this neutron time of flight detector is a trigger unit. This trigger is sensitive to electron from beta decay down to very low energies, insensitive to gamma rays and have a good timing performance, better than 1 ns. In order to satisfy these condition, we have developed a new system, which utilizes plastic scintillator but uses recently developed light readout technique, based on the so called Silicon Photomultiplier, manufactured by Sensl. New system has been developed and performance tested using digital data acquisition system at the University of Tennessee and will be utilized in future experiments involving VANDLE.

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