Breaking wave impacts on a monopile at 20 m depth are computed with a VOF (Volume Of Fluid) method. The impacting waves are generated by the second-order focused wave group technique, to obtain waves that break at the position of the monopile. The subsequent impact from the vertical run-up flow on a horizontal inspection platform is computed for five different platform levels. The computational results show details of monopile impact such as slamming pressures from the overturning wave front and the formation of run-up flow. The results show that vertical platform impacts can occur at 20 m water depth. The dependence of the vertical platform load to the platform level is discussed. Attention is given to the significant downward force that occur after the upward force associated with the vertical impact. The effect of the numerical resolution on the results is assessed. The position of wave overturning is found to be influenced by the grid resolution. For the lowest platform levels, the vertical impact is found to contribute to the peak values of in-line force and overturning moment.