This thesis deals with the description of $\gamma$-ray deexcitation of neutron resonances produced in thermal neutron capture below neutron separation energy. A subject of this thesis is obtaining information on absolute value of photon strength function (PSF) achieved from primary transitions in thermal neutron capture. The aim is to map and bring new information on absolute value of photon strength function (PSF) in $^{156}$Gd and $^{158}$Gd. The method which was used in this thesis can lead to refusion of several models of PSF a level density.