The number of taboo vertices in $G_t^{(1,p)}$ would be at least

$$\lfloor p(nd+1) \rfloor = \lfloor np\lceil 1/p \rceil + p \rfloor$$
$$\geq \lfloor np\lceil 1/p \rceil \rfloor$$
$$\geq \lfloor n \rfloor$$
$$= n.$$

Thus, in $G_t^{(1,p)}$, all the d degree vertices are made taboo since they were the highest degree vertices. So the maximal degree does not increase any further and is bounded above by $\lceil 1/p \rceil$.