$$C^{1}\hat{U} \iff C^{1}\hat{U}^{0} = \hat{I} \otimes |0\rangle\langle 0| + \hat{U} \otimes |1\rangle\langle 1|$$
$$= \hat{I} \otimes \hat{I} + (\hat{U} - \hat{I}) \otimes |1\rangle\langle 1|$$