54. We start with Eq. 33-76:

$$P_{\text{avg}} = \mathcal{E}_{\text{rms}} I_{\text{rms}} \cos\phi = \mathcal{E}_{\text{rms}} \left(\frac{\mathcal{E}_{\text{rms}}}{Z}\right)\left(\frac{R}{Z}\right) = \frac{\mathcal{E}_{\text{rms}}^2 R}{Z^2} \ .$$

For a purely resistive circuit, $Z = R$, and this result reduces to Eq. 27-23 (with V replaced with $\mathcal{E}_{\text{rms}}$). This is also the case for a series RLC circuit at resonance. The average rate for dissipating energy is, of course, zero if $R = 0$, as would be the case for a purely inductive circuit.