

Ejercicio N° 24. 71

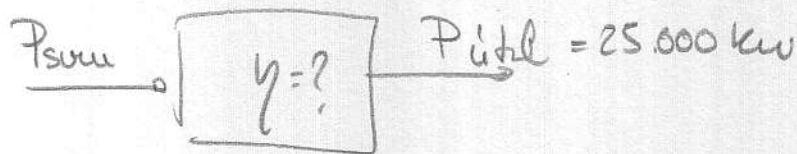
Datos

$$P = 25.000 \text{ kw.}$$

$$m_c = 200 \text{ Tm}$$

$$P_c = 8000 \frac{\text{kcal}}{\text{kg}}$$

$$t = 1 \text{ día.}$$



$$E_{\text{som}} = m_c \cdot P_c = 200 \cdot 10^3 \cdot 8000 = 16 \cdot 10^9 \text{ kcal}$$

$$16 \cdot 10^9 \text{ kcal} \cdot \frac{10^3 \text{ cal}}{1 \text{ kcal}} \cdot \frac{4,18 \text{ J}}{1 \text{ cal}} = 6'688 \cdot 10^{12} \text{ J}$$

$$P_{\text{som}} = \frac{E_{\text{som}}}{t} = \frac{6'688 \cdot 10^{12}}{86400} = 77407407'41 \text{ W}$$
$$= 77407'40 \text{ kw}$$

$$24 \text{ h} \cdot \frac{3600 \text{ s}}{1 \text{ h}} = 86400 \text{ s}$$

$$\eta = \frac{P_{\text{util}}}{P_{\text{som}}} \cdot 100 = \frac{25000}{77407'40} \cdot 100 = 32'29 \%$$