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PZI 8.

$H_{ug} = 26 \frac{MJ}{kg}$

$w(S) = 0.01$

$P_n = 400\,MW$

$\eta = 0.33$

$m = 0.74$

$m(SO_2) = ?$

$m = \frac{P \cdot t_{god}}{P_n \cdot t_{god}} \Rightarrow P = m \cdot P_n = 296\,MW$

$W_{god_d} = P \cdot t_{god} = 296\,MW \cdot 365 \cdot 24 \cdot 3600$

$W_{god_d} = 9334656000\,MJ$

$W_t \cdot \eta = W_{el} \Rightarrow$

$W_t = \frac{W_{el}}{\eta} = \frac{9334656000\,MJ}{0.33}$

$W_t = 28286836363.6\,MJ$

$H_{ug} \cdot m_{ug} = W_t$

$m_{ug} = \frac{W_t}{H_{ug}} = \frac{28286836363.6\,MJ}{26\,\frac{MJ}{kg}} = 1087955244.75\,kg$

$m(S) = 0.01 \cdot m_{ug} = 10879552.4475\,kg$

$S + O_2 \rightarrow SO_2$

$1\,kmol\,S + 1\,kmol\,O_2 \rightarrow 1\,kmol\,SO_2$

$32\,kg\,S + 32\,kg\,O_2 \rightarrow 64\,kg\,SO_2 \;/:32$

$1\,kg\,S + 1\,kg\,O_2 \rightarrow 2\,kg\,SO_2$

$m(SO_2) = 2 \cdot m(S) = 21759104,89\,kg$

$= 21759,1\,t$