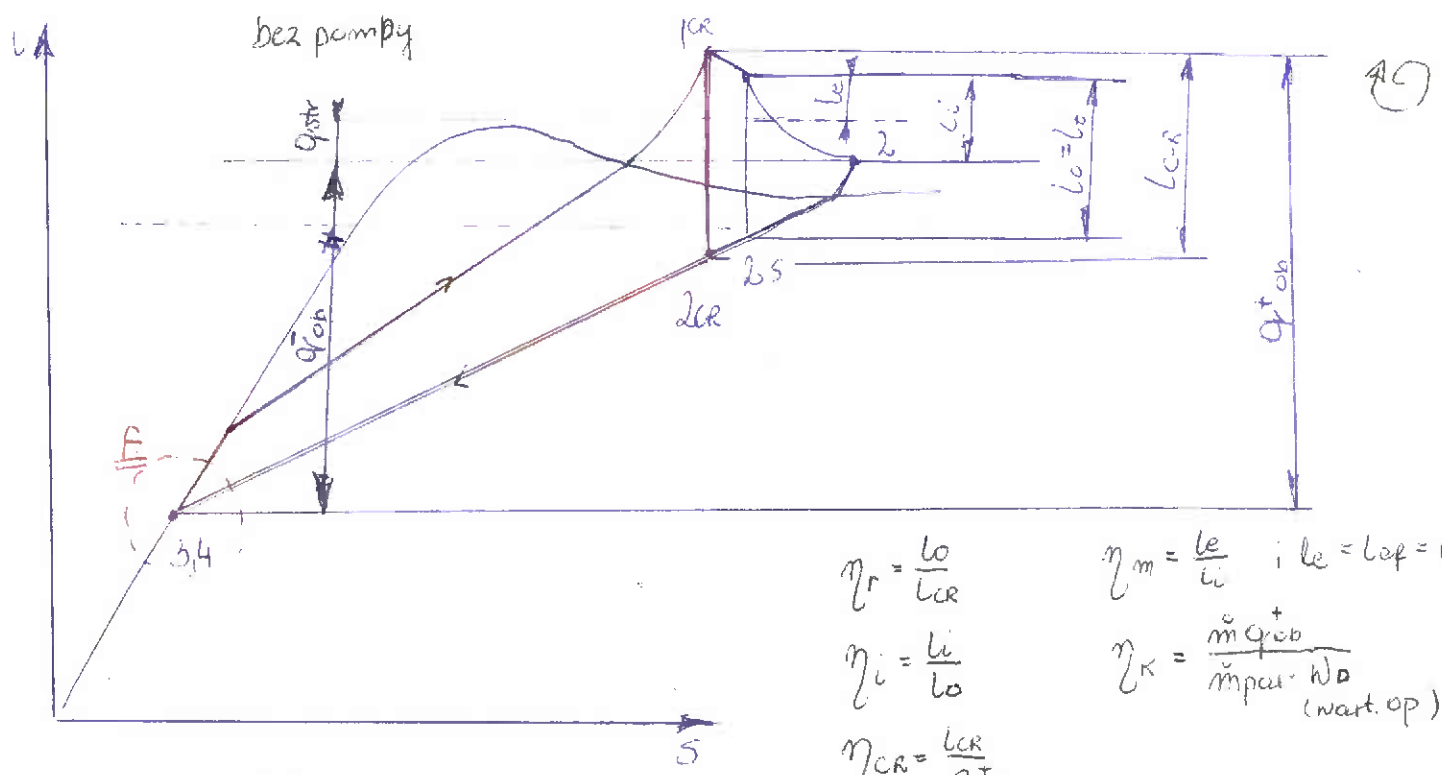


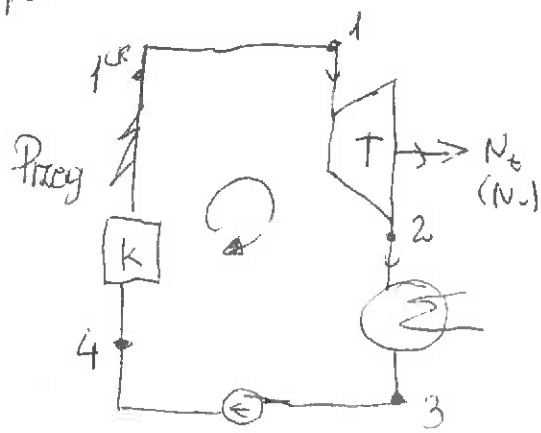
$\eta_r = \frac{L_o}{L_{CR}}$ $\quad \eta_m = \frac{L_e}{L_i}$; $L_e = L_{ef} = L_{CR}$

$\eta_i = \frac{L_i}{L_o}$ $\quad \eta_K = \frac{\dot{m} q^+_{ob}}{\dot{m}_{pal} \cdot W_D}$ (wart. op)

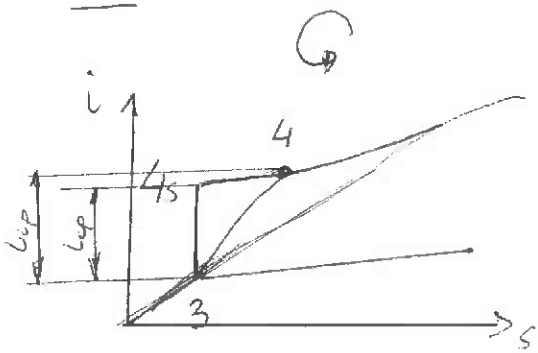
$\eta_{CR} = \frac{L_{CR}}{q^+_{ob}}$

$\eta_{sil} = \eta_{CR}\,\eta_r \cdot \eta_i \cdot \eta_K \cdot \eta_m = \frac{\dot{m} \cdot L_e}{\dot{m}_{pal} \cdot W_D}$

$\eta_{elk} = \eta_{sil} \cdot \eta_{gen}$



(P) Pompa wykł. (A)



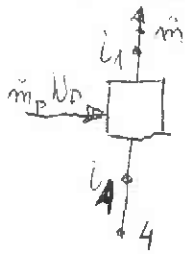
$\eta_{sil} = \frac{L_e - N_{ef\,p}}{\dot{m}_{pal} \cdot W_D}$!

$N_{ef\,p} = \frac{|L_{t\,p}|}{\eta_i \eta_m}$

$|L_{t\,p}| = \dot{m}(v_w(p_4 - p_3))$

v_w – obj. wł. wody

Bilans kotła (entalpowy)



$\eta_k = \frac{\dot{m}(i_1 - i_4)}{\dot{m}_{pal} \cdot W_D}$

Bilans pompy (entalpowy)
IZT (izentropa)

$0 = \Delta i + l_{t\,p}$

$0 = i_{4s} - i_3 + l_{t\,p}$

$i_3 - i_{4s} = l_{t\,p} = v_w(p_3 - p_{4s})$

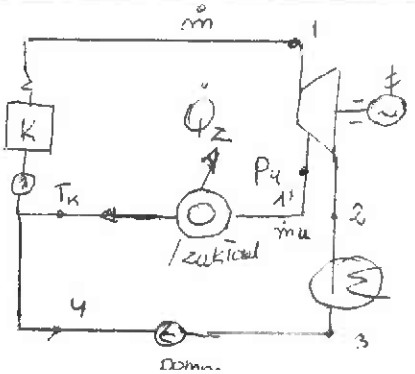
Bilans turbiny (izentr.)

$0 = i_{2s} - i_1 + l_{t\,turb}$

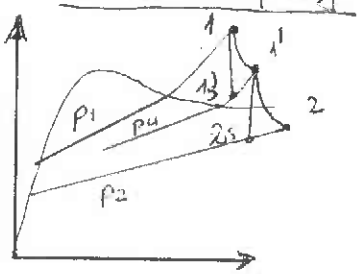
$l_{t\,turb} = i_1 - i_{2s}$

lub (z rys)

$i_1 = i_{2s} + l_{t\,turbiny}$



Bilans entalpowy



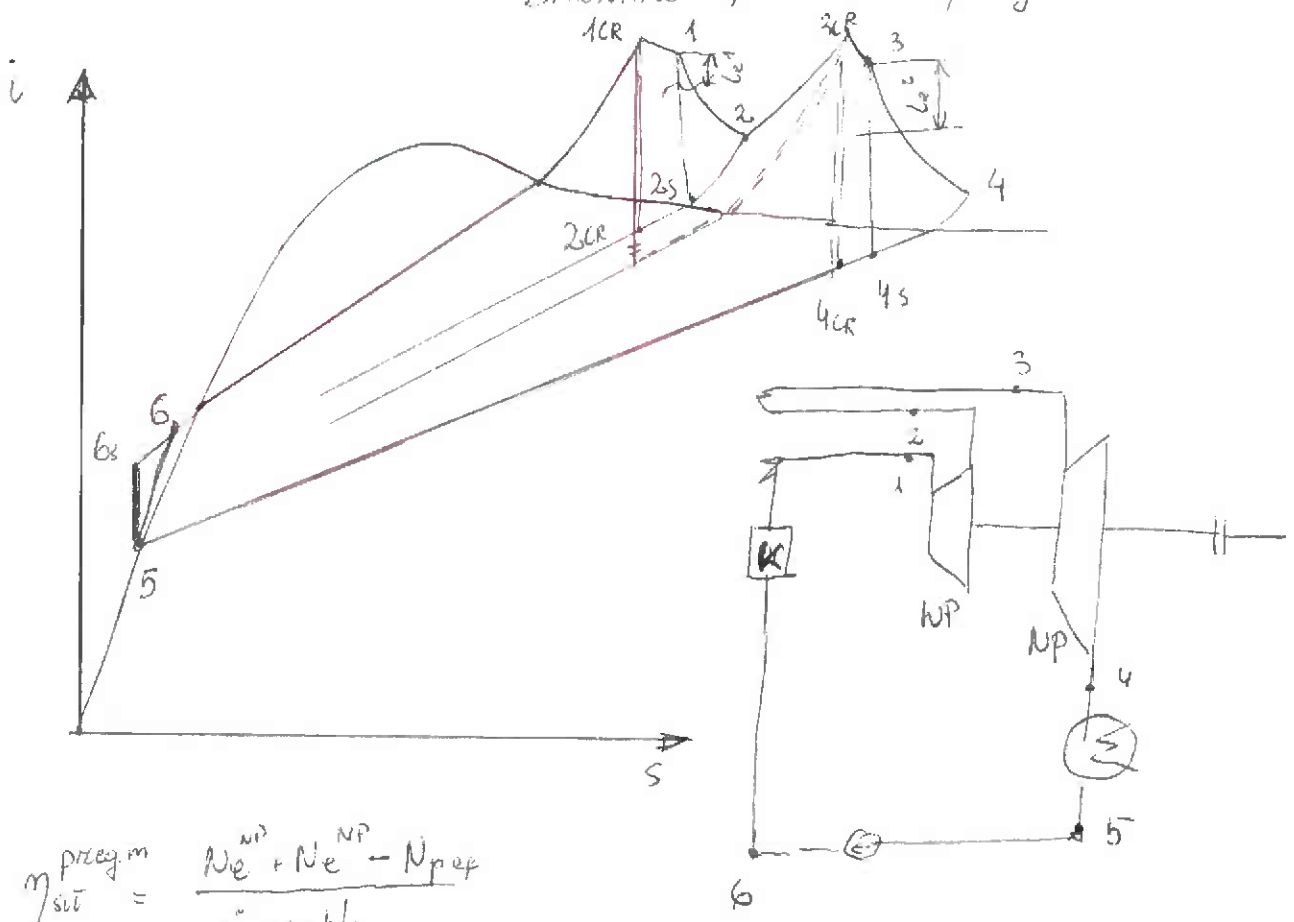
Bilans turbiny

$\dot{m} i_1 = m_u \cdot i_{1u} + (m - m_u) \cdot i_2 + N_i$

Bilans zakł. (odbiornik)

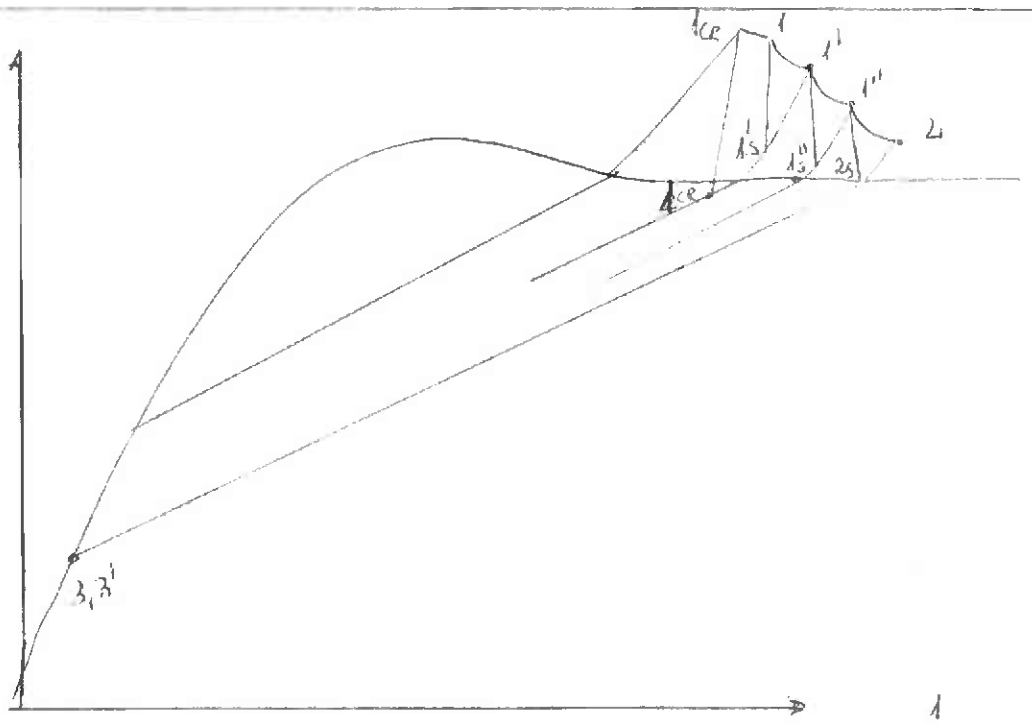
$m_u \cdot i_1' = Q_2 + \dot{m}_u \cdot i_K$

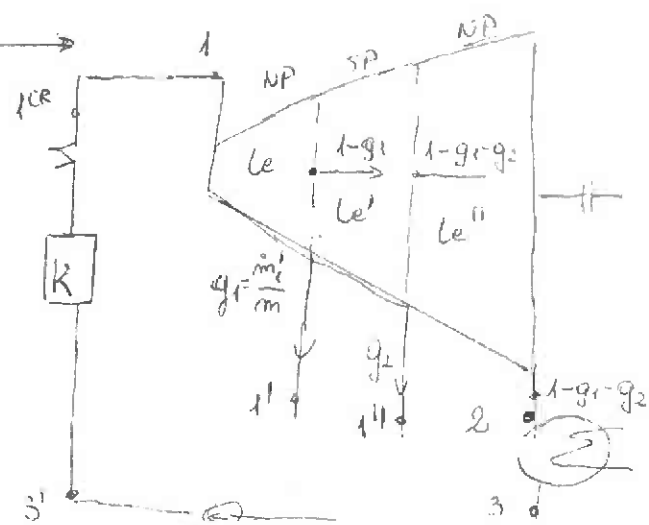
Siłownia parowa z przegrzewem międzystopniowym



$$\eta_{sit}^{przegrz} = \frac{N_e^{WP} + N_e^{NP} - N_{pomp}}{\dot{m}_{pal} \cdot W_D}$$

SIŁOWNIA Z UPUSTEM.





$$\text{efektywna } \eta_{sit.} \approx \frac{\dot{m} l_e + (\dot{m} - \dot{m}_1') \cdot l_e' + (\dot{m} - \dot{m}_1' - \dot{m}_4'') l_e''}{\dot{m}_{pal} \cdot W_D}$$