

$$\text{lb/hr} \rightarrow \text{mol/h}$$

$$\frac{3000 \text{ lb}}{1 \text{ hr}} \times \frac{473.14 \text{ g}}{1 \text{ lb}} \times \frac{1 \text{ mol}}{98.969 \text{ g/mol}} = 13,770.7 \text{ mol/h}$$

Fuel: $E = 3000 \text{ lb/hr}$

or

$$\boxed{1} \begin{cases} E_1 = 13751 \text{ mol/hr} \\ V_1 = 0 \\ H_1 = 0 \end{cases}$$

$$\boxed{2} \begin{cases} E_2 = E_1 + E_7 \\ V_2 = V_1 \\ H_2 = 0 \end{cases}$$

$$\boxed{3} \begin{cases} E_3 = 0.6E_2 \\ V_3 = 0.4E_2 + V_2 \\ H_3 = 0.4E_2 \end{cases}$$

$$\boxed{4} \begin{cases} E_4 = 0 \\ V_4 = 0.16V_3 \\ H_4 = H_3 \end{cases}$$

$$\boxed{5} \begin{cases} E_5 = E_3 \\ V_5 = 0.84V_3 \\ H_5 = 0 \end{cases}$$

$$\boxed{6} \begin{cases} E_6 = 0.09E_5 \\ V_6 = 0.94V_5 \\ H_6 = 0 \end{cases}$$

$$\boxed{7} \begin{cases} E_7 = 0.91E_5 \\ V_7 = 0.06V_5 \\ H_7 = 0 \end{cases}$$

$$E_1 = 13751$$

$$V_1 = 0$$

$$H_1 = 0$$

$$-E_1 + E_2 - E_7 = 0$$

$$V_2 - V_1 = 0$$

$$H_2 = 0$$

$$E_3 - 0.6E_2 = 0$$

$$-0.4E_2 + V_2 + V_3 = 0$$

$$H_3 - 0.4E_2 = 0$$

$$E_4 = 0$$

$$V_4 - 0.16V_3 = 0$$

$$H_4 - H_3 = 0$$

$$E_5 - E_3 = 0$$

$$V_5 - 0.84V_3 = 0$$

$$H_5 = 0$$

$$E_6 - 0.09E_5 = 0$$

$$V_6 - 0.94V_5 = 0$$

$$H_6 = 0$$

$$E_7 - 0.91E_5 = 0$$

$$V_7 - 0.06V_5 = 0$$

$$H_7 = 0$$

$$(E_1 \rightarrow E_7)(V_1 \rightarrow V_7)(H_1 \rightarrow H_7)$$

