Per your request I obtained the data you need for the economic analysis. Here are the results of my calculations:

- Reaction 1: The reaction time is 43,200 s, the maximal liquid volume 1.62 m$^3$ and the maximal cooling load in the condenser 22.7 kJ/s. At the end of the reaction the volume is 1.60 m$^3$ and the temperature 377.9 K.

- Reaction 2: The reaction takes 12,061 s. 3,433.0 mols of methanol are needed for the reaction. The inlet volume is 1.66 m$^3$ and the outlet volume 1.61 m$^3$.

- Distillation 1: the simulated distillation time (from moment of first draw until temperature constraint) is 22,164 s. The distillation overhead consists of 1710.6 mols methanol, 1,848.0 mols R1, 6679.2 mols toluene, 5.7 mols E and 3.6 mols A.

- Distillation 2: the simulated distillation time (from moment of vacuum initiation until temperature constraint) is 10,215 s. The distillation bottom consists of 0.06 mols active catalyst, 24.94 mols deactivated catalyst, 1.46 mols I2 and 65.42 mols A.

- Reaction 3: The reaction time is 11,562 s and 51,501.3 mols water are needed. The inlet volume is 1.66 m$^3$ and the outlet volume 1.82 m$^3$.

- Distillation 3: the simulated distillation time (from moment of first draw until purity constraint) is 115,679 s. The distillation overhead (top) consists of 1,459.2 mols methanol, 834.6 mols toluene, 257.5 mols E, 218.2 mols A and 50,771.7 mols water. The pot fulfills the purity specification with 729.6 mols D, 1,870.9 mols A and 83.3 mols toluene.