

Steam line break

First seminar SH2705

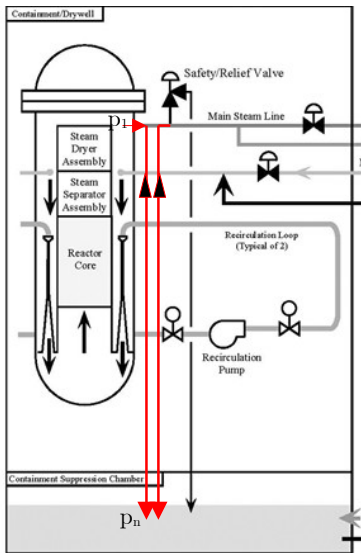
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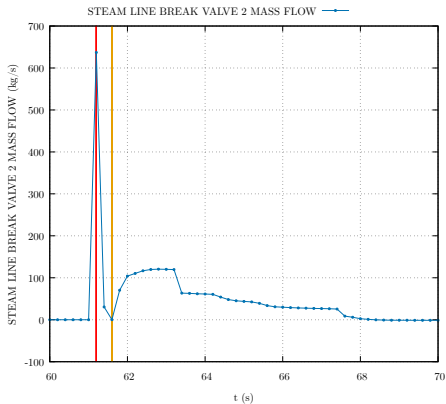
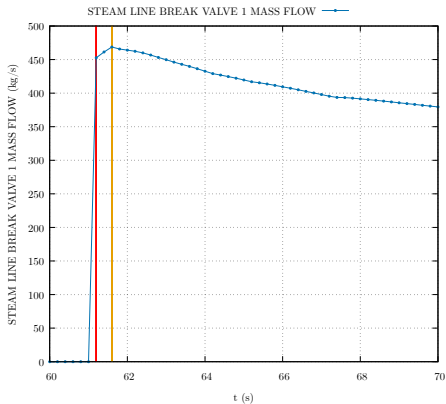
123. 5. 2023

Event description

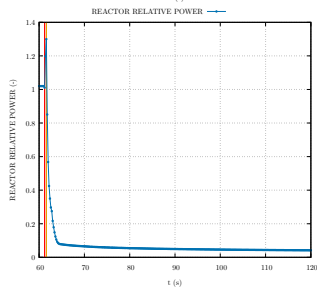
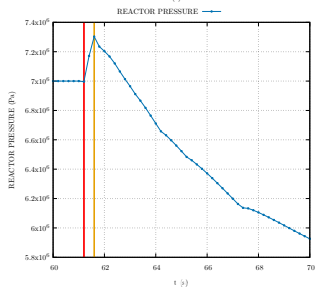
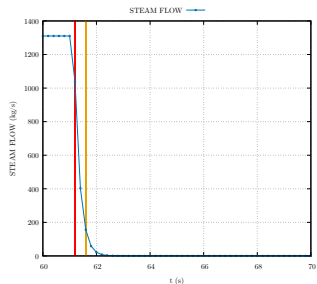
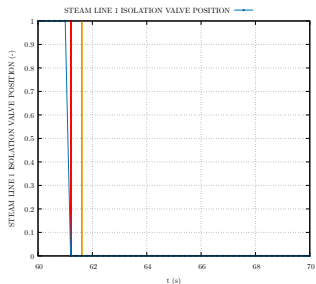


- Start of the transient:
opening of the steam break valves
- Reactor will automatically
SCRAM & MSIV will close
- Depressurization:
 - positive pressure
feedback (water level)
 - relief system
activation
 - recirculation flow drop
to cca 50 % (under
this level is instability
region)
 - feed water flow drop

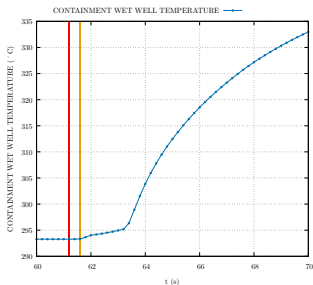
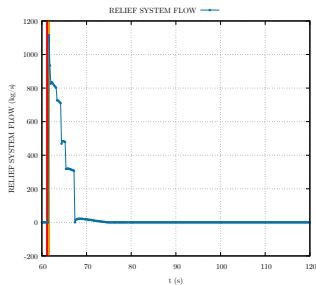
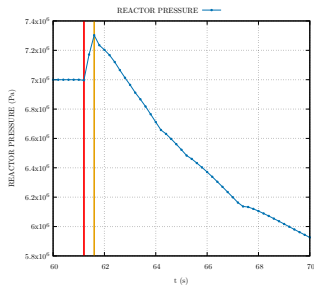
Steam release - start of the transient



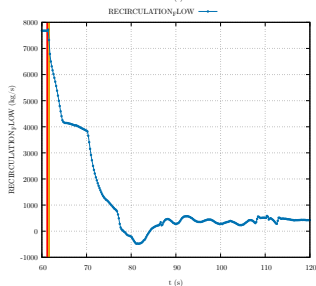
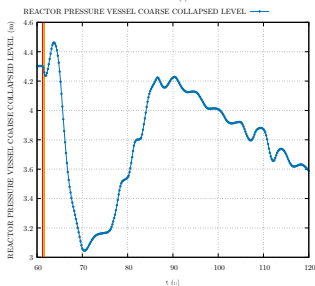
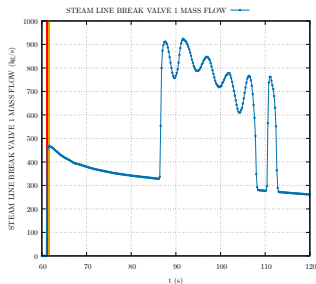
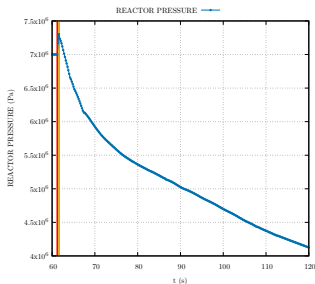
What happens in the reactor?



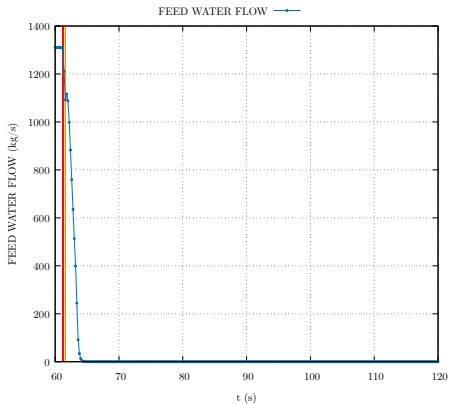
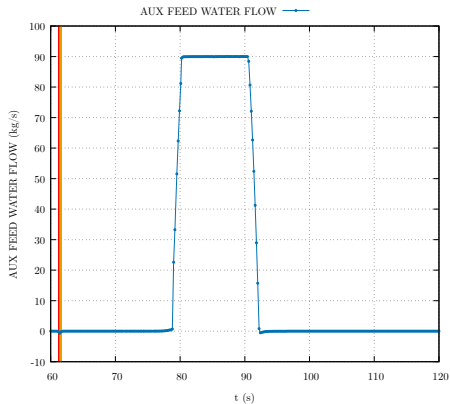
Is the break valve flow enough?



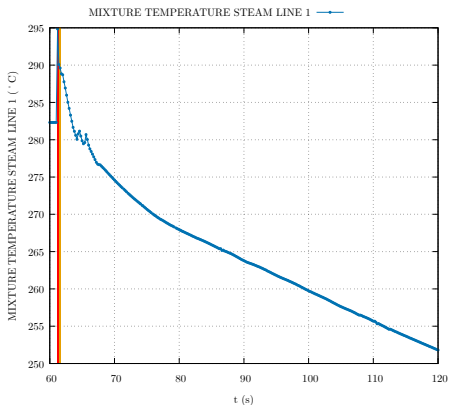
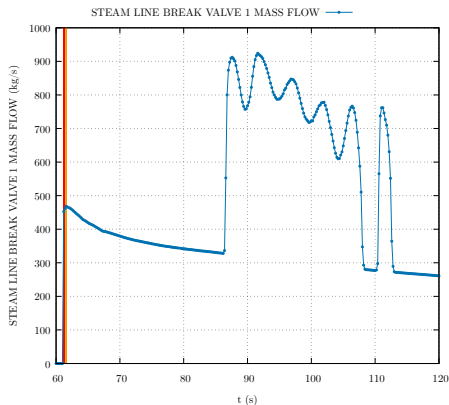
Longer period of time



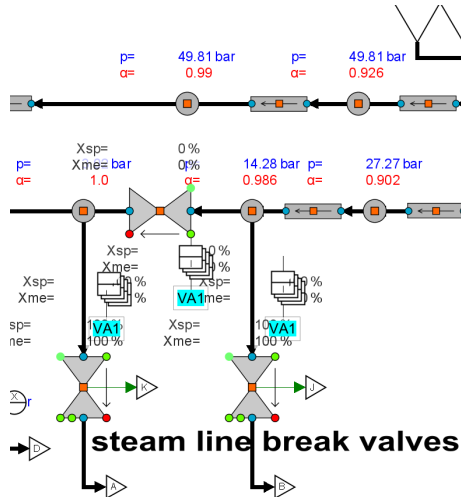
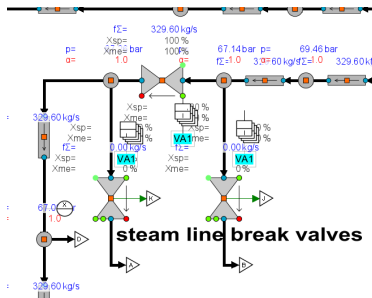
Source of feed water



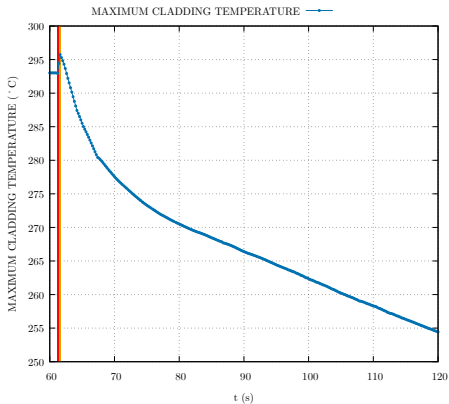
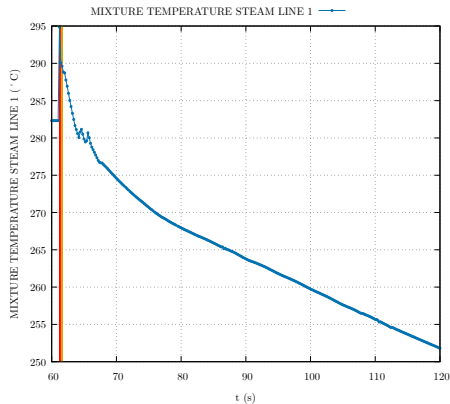
What is wrong with the break valve?



- The steam quality is lower than 1! (Temperature and pressure drop matched saturation level)



Temperatures



How to make it worse?

Thanks for attention!
