

Pressure transient

First seminar SH2705

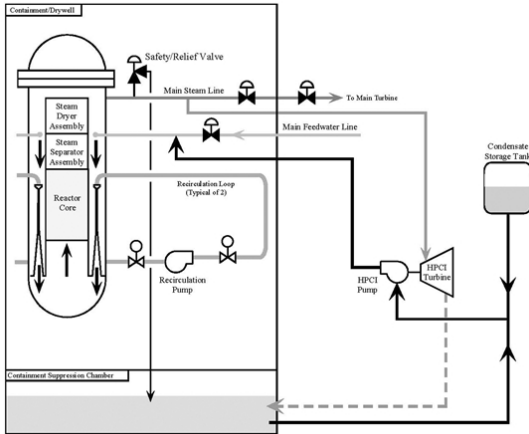
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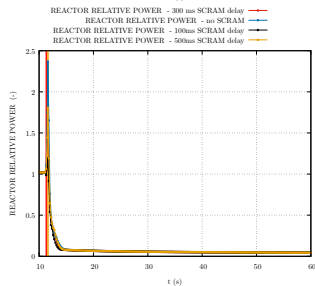
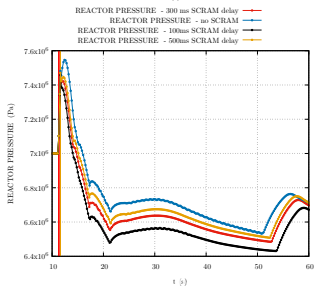
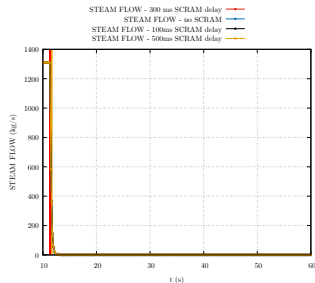
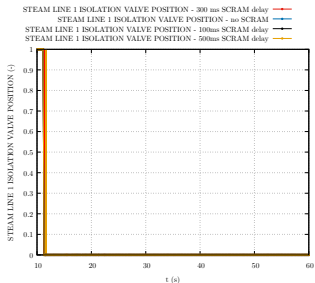
Event description



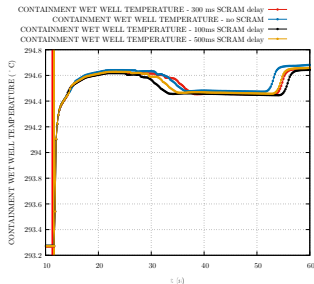
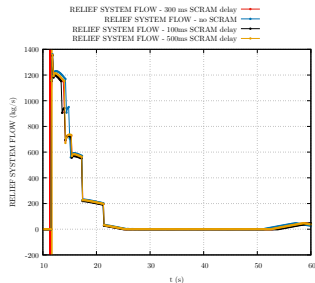
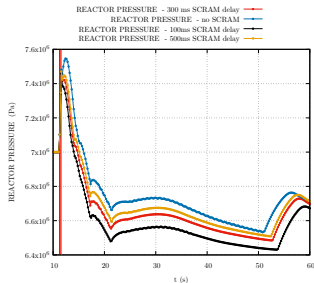
- Start of the transient: closure of the MSIV
- Reactor will automatically SCRAM if MSIV closed
- Conditions:
 - 100 ms SCRAM delay
 - 300 ms SCRAM delay
 - 500 ms SCRAM delay
 - no SCRAM (control logic removed from the simulation)

In the last case: reactor WILL SCRAM, but not from MSIV closure signal

Start of the transient

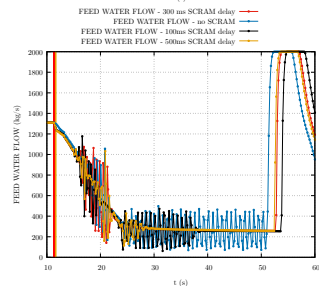
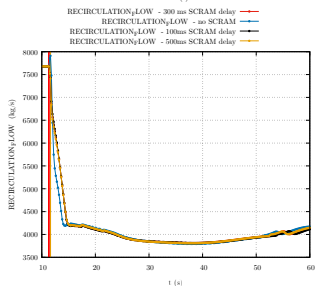
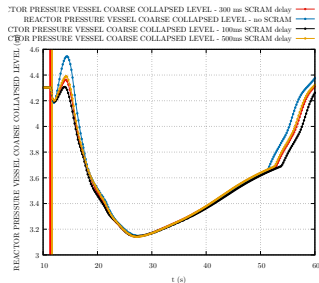
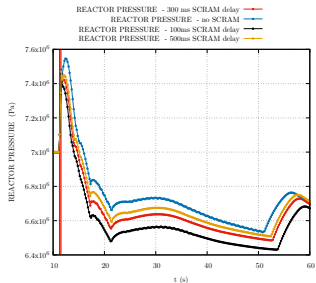


Pressure relief

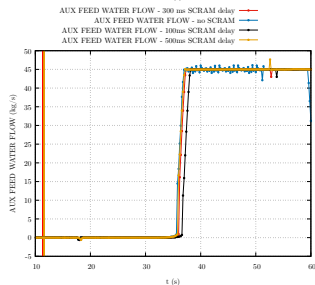
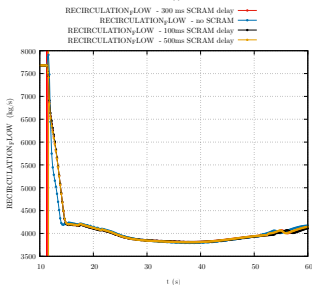
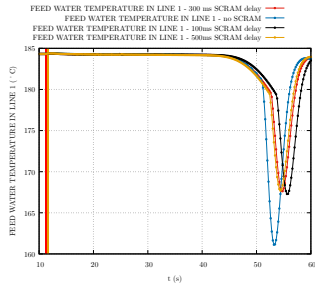
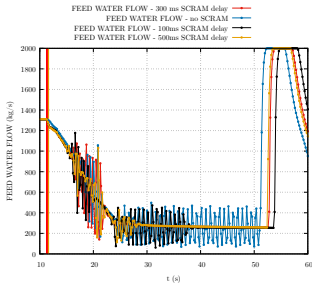


- Closure of relief valves by groups
- Different relief procedure for no SCRAM - caused by much higher power rise (nearly 2 times than for 50 ms SCRAM delay)

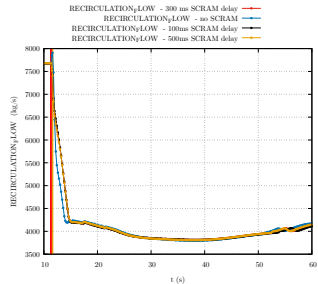
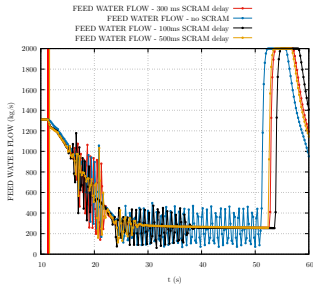
What happens in the reactor?



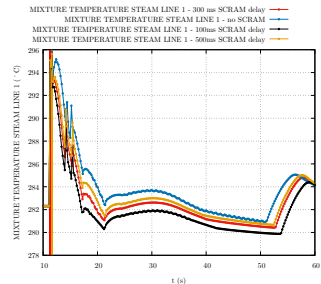
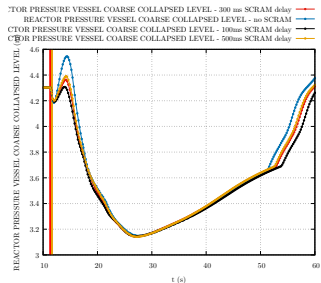
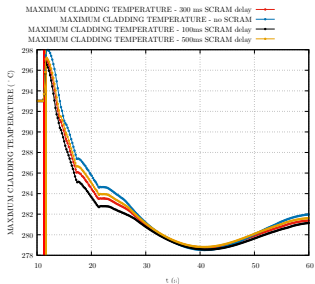
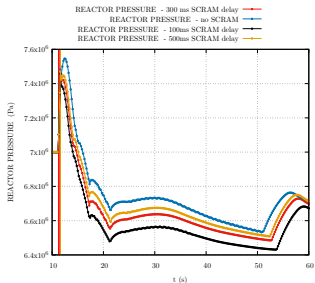
What causes the oscillations in the feed water flow?



The natural convection instability?



Temperatures



Thanks for attention!
