

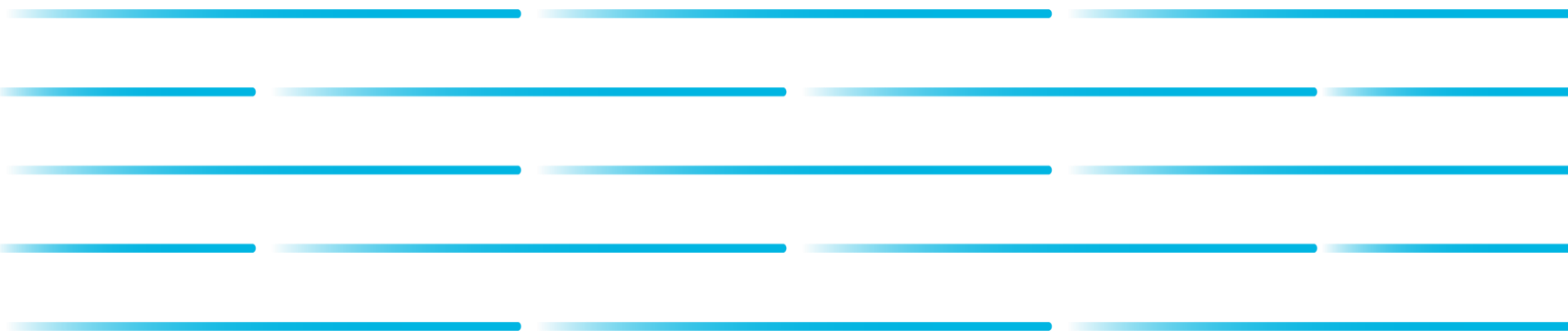


Proposed enhancements/modifications to regc_b/reec_d

Juan J. Sanchez-Gasca

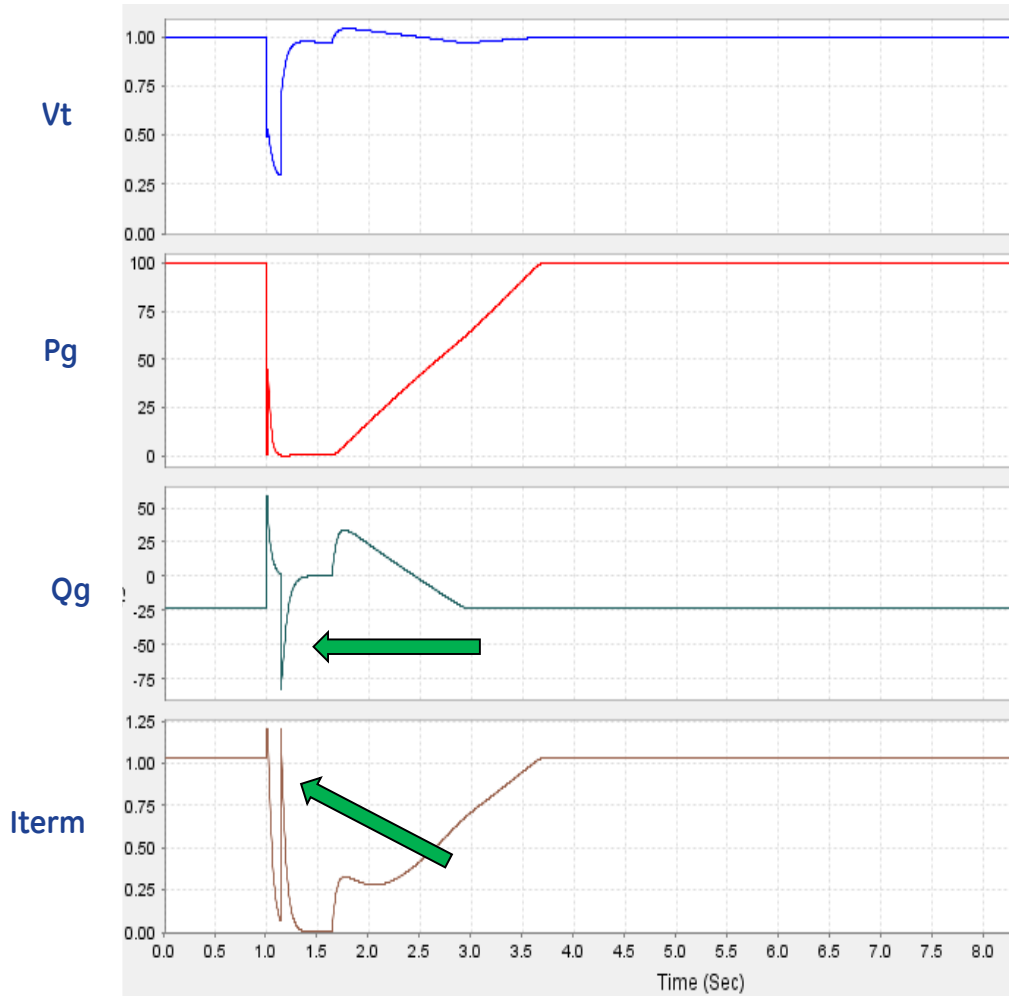
MVS Meeting

December 2020



Test 1 A regc_b + reec_d

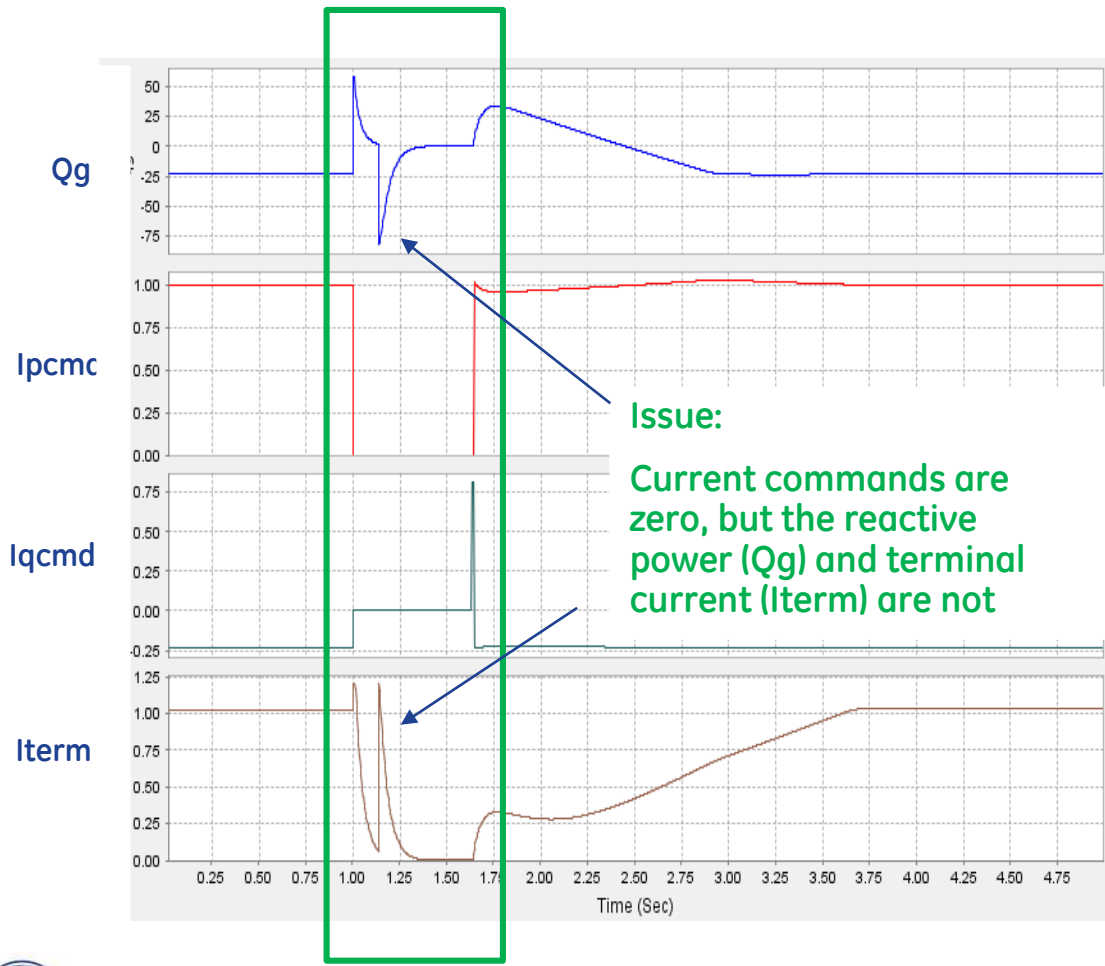
August 2020 test results:



Issue: the terminal current and reactive power are incorrect when blocking is on and/or current commands are zero

Test 1 A

August 2020 test results:



During blocking:

$$I_{qmax} = I_{pmax} = I_{qmin} = I_{pmin} = 0$$

and I_{pcmd} and $I_{qcmd} = 0$

Q_g and I_{term} should be zero vs. -75 MVar (min value of Q_g) and 1.2 p.u. (max value of I_{term})

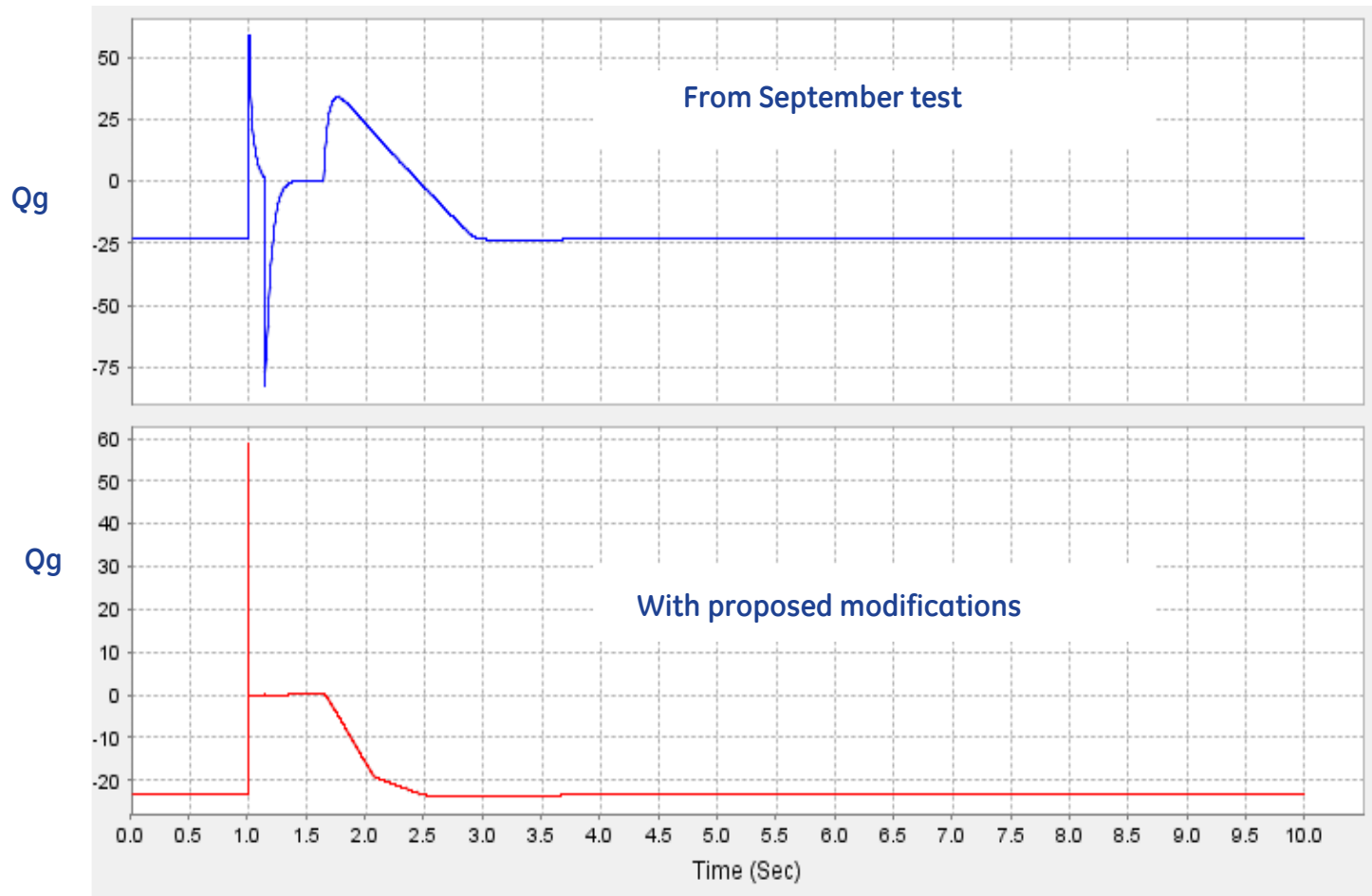


Proposed modifications

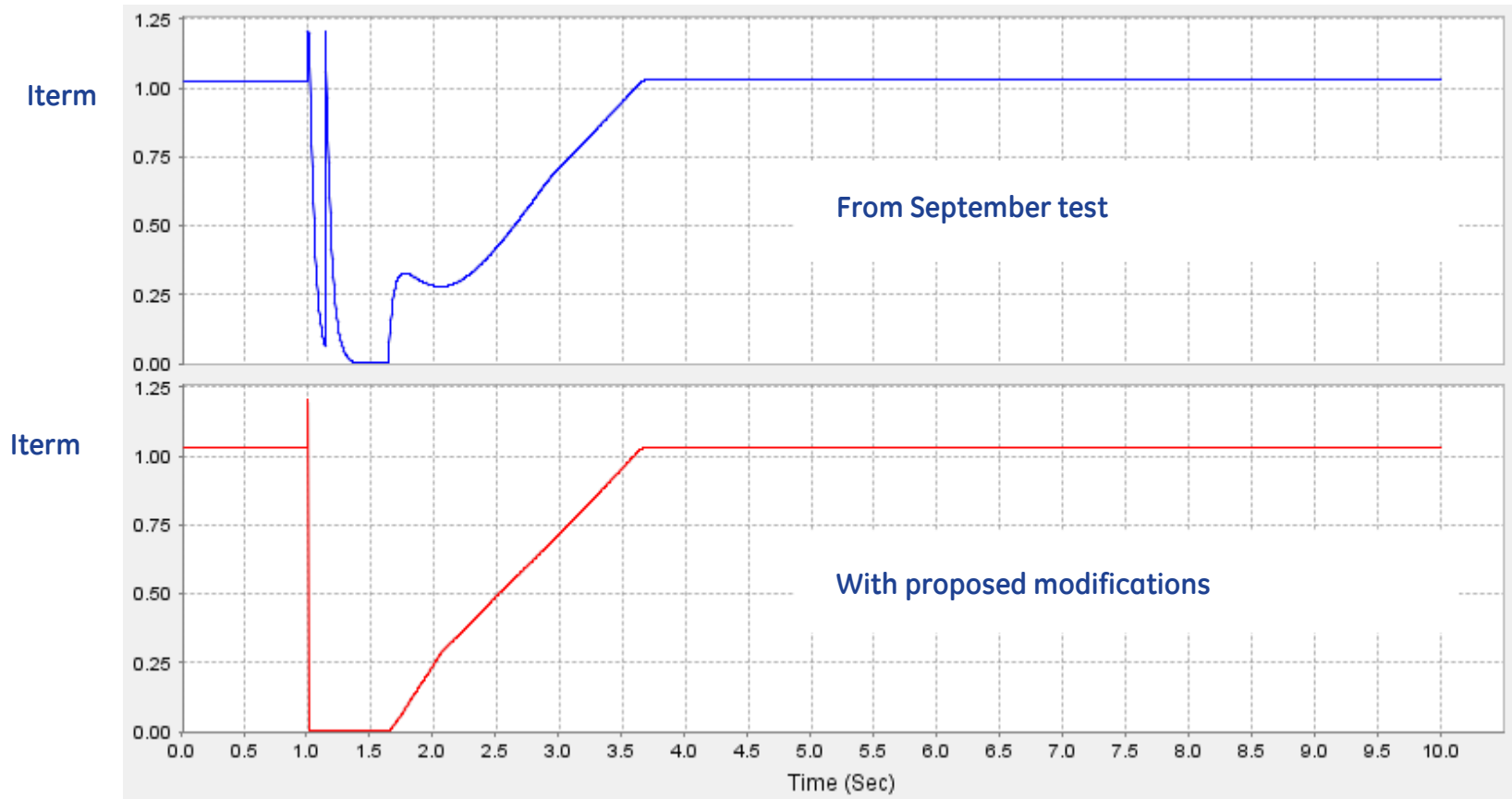
Set terminal current limit to zero when:

- 1) Converter is in blocking mode
- 2) Commands ipcmd and iqcmd are zero and reec_d is timing following vdip

Test 1 A (comparison of simulation results)

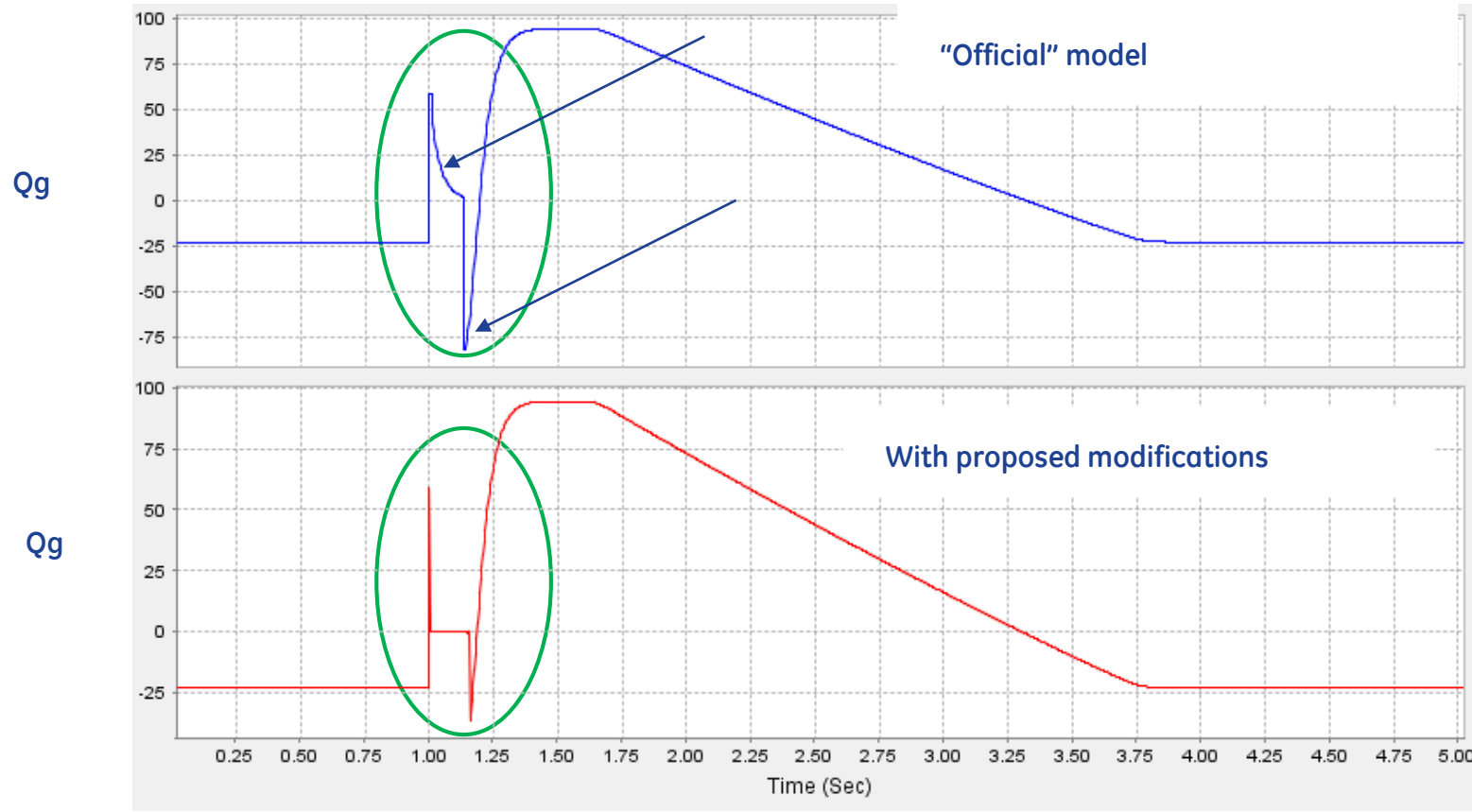


Test 1 A (comparison of simulation results)



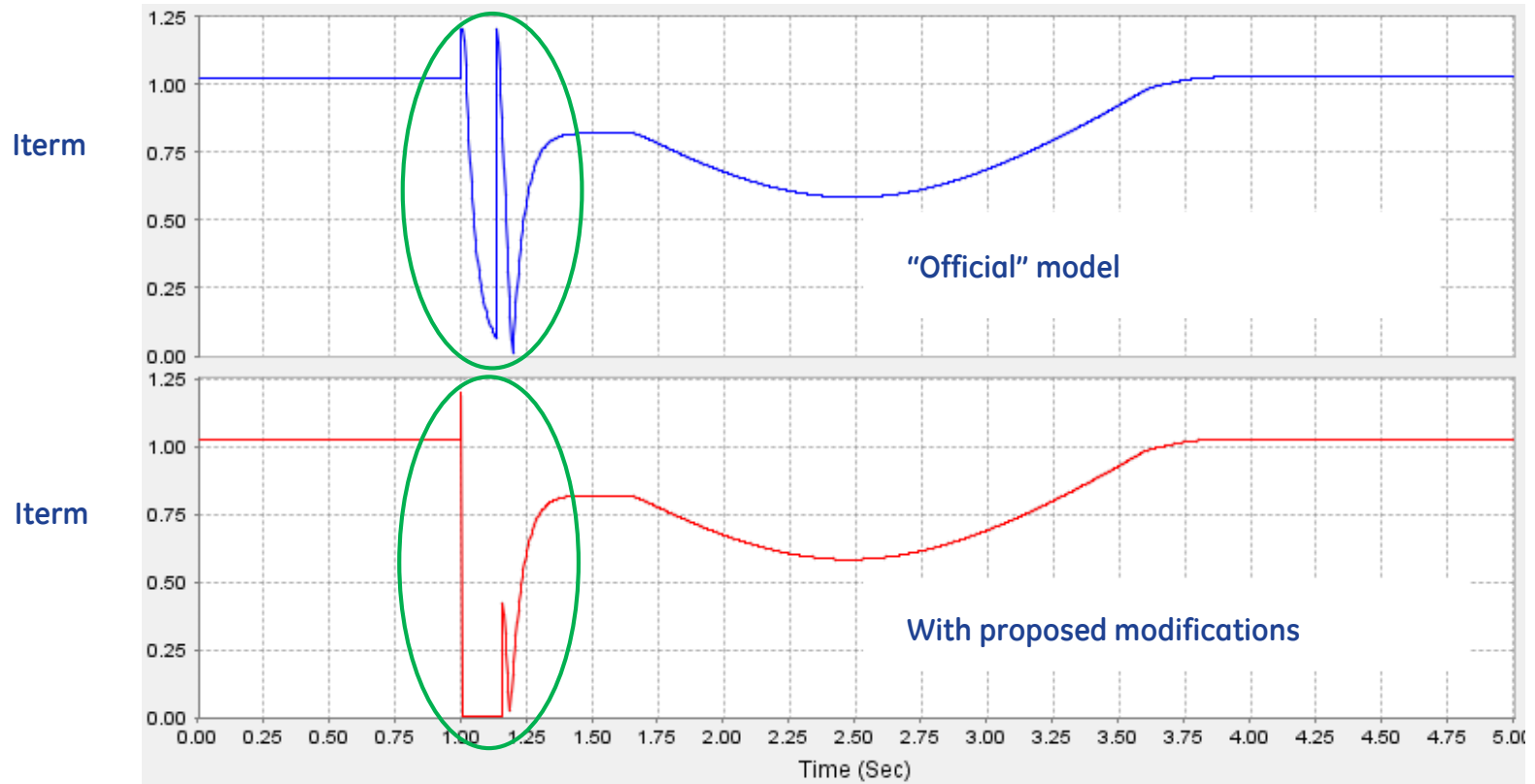
Test 1 A (reactive power, comparison of simulation results)

If blocking time is reduced to 0.02 sec (vs. 0.5 sec):



Test 1 A (terminal current, comparison of simulation results)

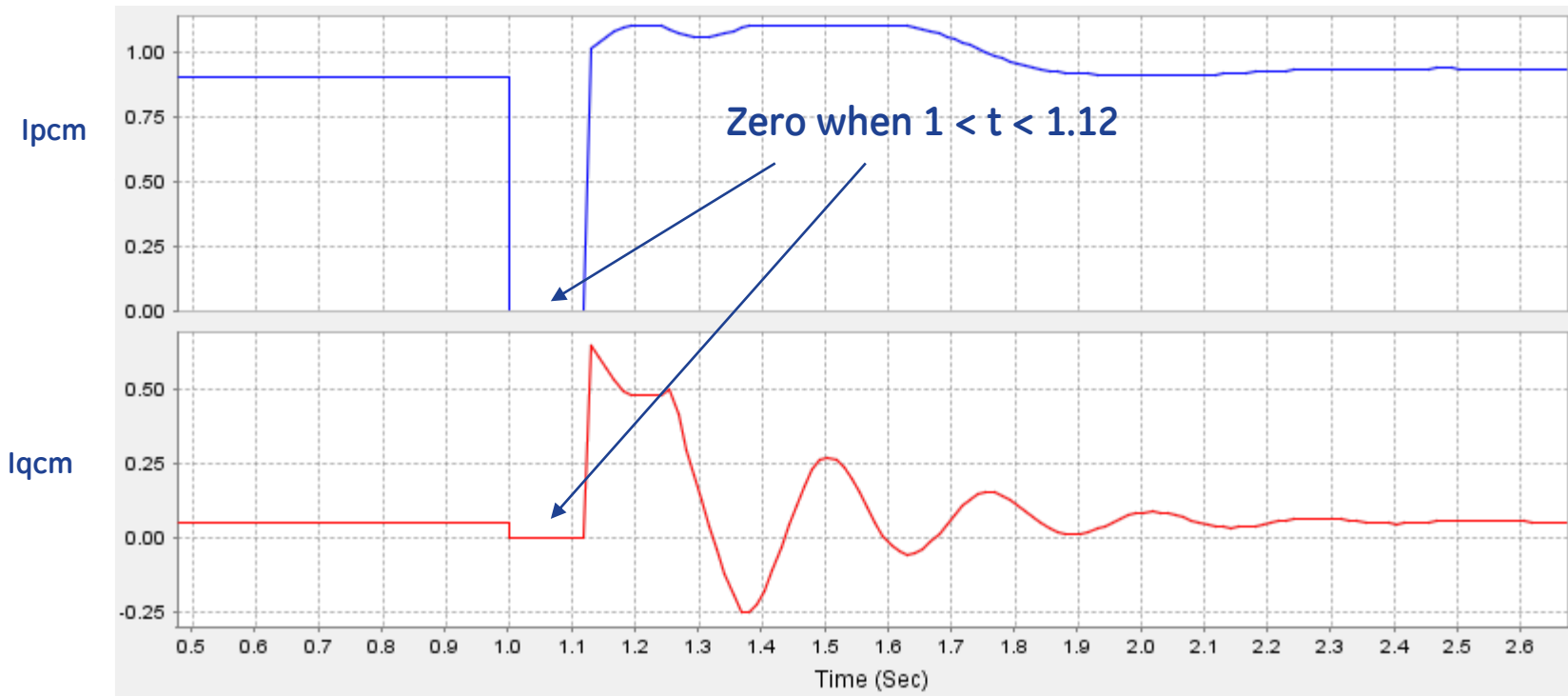
If blocking time is reduced to 0.02 sec (vs. 0.5 sec):



Second test system

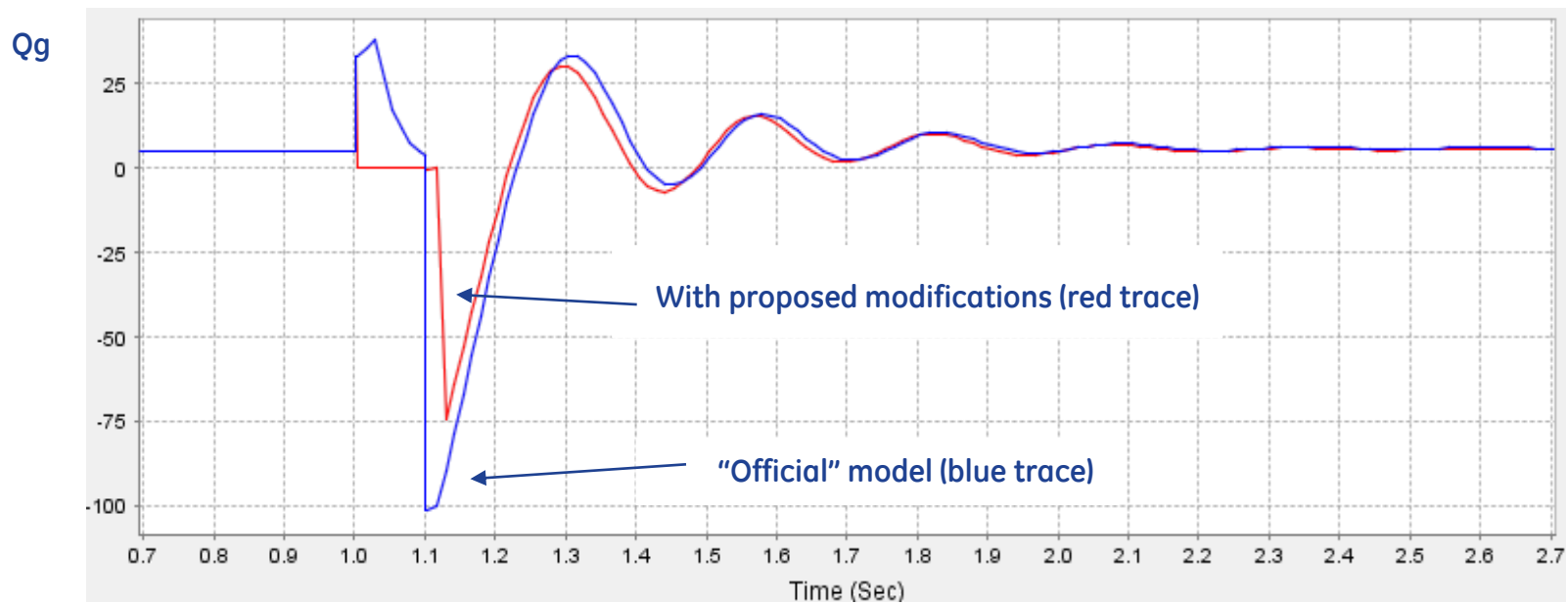
Blocking time = 0.02 sec

Current commands:



Second test system

Reactive power:



Second test system

Terminal current:

