

Comparison of the results provided by versions 2.71 and 2.72 of the steam plant pilot in off-design regime

hlc = 326.49 Re = 8989.63 hlvc = 362.16 Re = 7440.27 hvc = 374.46 Re = 7002.75	hlc = 332.1 Re = 8629 AI = 4291 hlvc = 357.5 Re = 7655 Alv = 881.5 hvc = 374.5 Re = 7093 Av = 3456	hlc = 365.1 Re = 8627 AI = 2431 hlvc = 357.6 Re = 7655 Alv = 879.0 hvc = 374.5 Re = 7093 Av = 3456	hlc = 365.1 Re = 8627 AI = 2438 hlvc = 357.6 Re = 7655 Alv = 885.3 hvc = 374.5 Re = 7093 Av = 3456
hlf = 583.36 Re = 2883.94 hlvf = 1301.14 Re = 6347.38 hvf = 165.51 Re = 14996.93	hlf = 435.0 Re = 2884 UAI = 1406 hlvf = 1344 Re = 6348 UAlv = 610.6 hvf = 179.7 Re = 14997 UAv = 554.4	hlf = 958.3 Re = 2885 UAI = 1407 hlvf = 1344 Re = 6349 UAlv = 608.9 hvf = 179.7 Re = 15000 UAv = 554.4	hlf = 953.9 Re = 2885 UAI = 1407 hlvf = 1326 Re = 6349 UAlv = 608.9 hvf = 179.7 Re = 15000 UAv = 554.5
TE 7500	TE 8627	TSG 6775	TSG 6779

This figure, which shows the values of the exchange coefficients, Reynolds numbers, surfaces and UAs of each sub-exchanger, makes it possible to compare the results provided by the different versions of the steam plant pilot in off-design regime.

The leftmost window corresponds to the old version 2.71. The model uses the TechnoEvaporator (TE) class, and the total area is equal to 7500 m².

The next window corresponds to the new version 2.72. The model also uses the TE class and EvapConfig's Gungor Winterton correlation. The calculated area is equal to 8627m². The project file is steamOffDesign_272.prj.

The third window shows the results obtained using the TechnoSteamGenerator (TSG) class and EvapConfig's Gungor Winterton correlation. The calculated area is worth 6775 m². The project file is steamOffDesign_TSG_GW_272.prj.

The fourth window uses the same model as the third, with the FlowConfig specific to the TechnoSteamGenerator class, again for the correlation of Gungor Winterton. The results are almost the same for these last two windows. The project file is steamOffDesign_TSG_272.prj.

Please note that the switch from TechnoEvaporator to TechnoSteamGenerator has the effect of almost doubling the value of hlf due to the inclusion of the nucleate boiling in the economizer, and therefore reducing the surface area by more than 20%.