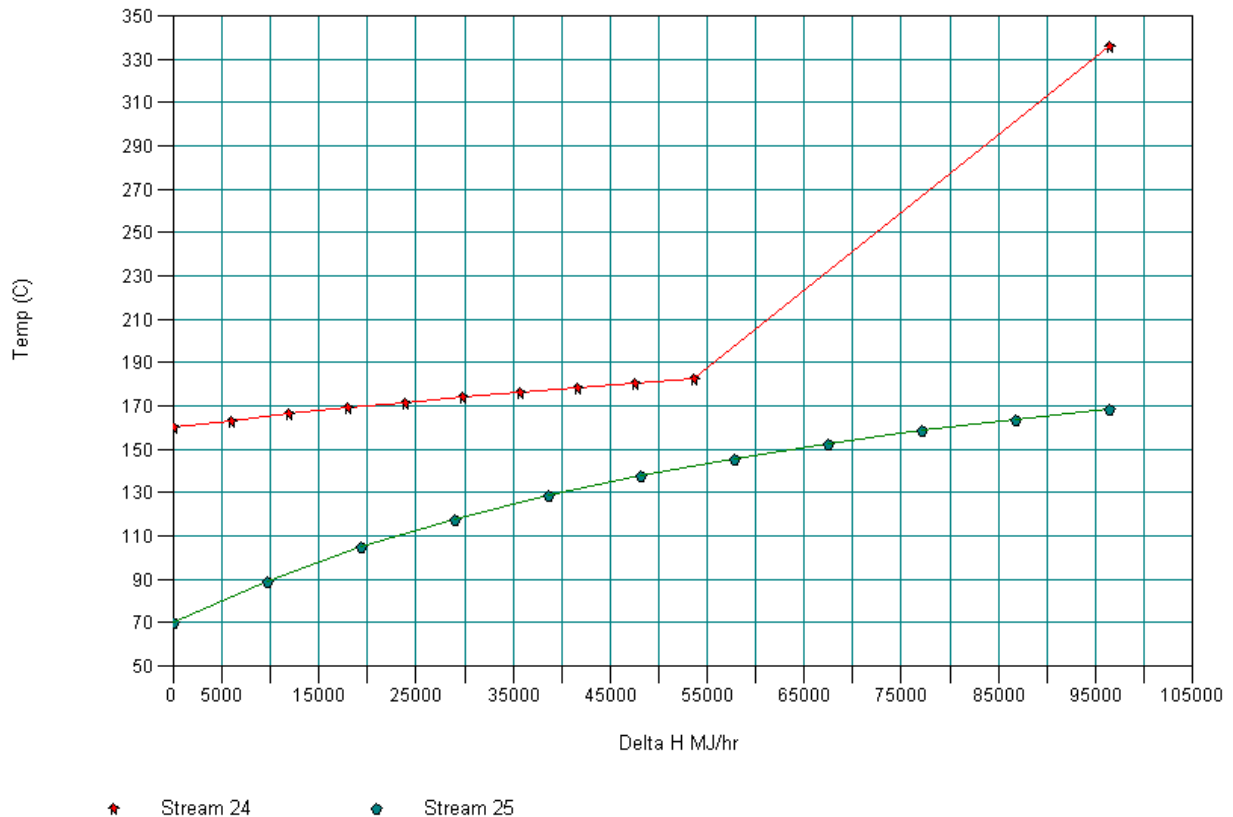


Ammonia Syngas Plant

Exchanger 19 Heat Curve



DESCRIPTION:

Real life technology to make 3:1 H₂/N₂ syngas has been shown. It involves processes such as methane conversion with steam and air, CO to CO₂ conversion (the Shift reaction), and the methanation reaction. The flowsheet includes multiple recycle loops.

CHEMCAD 5's Equilibrium Reactor and Gibbs Reactor models are perfectly fit to rigorously calculate reactions involved in syngas manufacture. The Equilibrium Reactor has equilibrium constants for methanation/shift reaction built-in, so it does not require any intervention from the user.

CHEMCAD 5 is very useful in everyday plant operation. Once the plant has been modeled with a flowsheet (even a simplified one), it is very easy to find out the process bottlenecks, units with excessive utility consumption, etc. Very often, it is enough to change some process parameters to save substantial money and to make better product with existing equipment. Sometimes a small revamp would be adequate. When the story is the heat exchanger, the additional module CC-Therm can help to rate existing exchanger, make modifications in the heat exchanger, or design a new one. It has been proven that the savings achieved with CHEMCAD and CC-Therm can exceed many times the initial license cost.