

Heat Recovery Steam Generators

Thermal Design & Testing

**...just the color figures for those who got the B&W
printed book...**

by D. James Benton

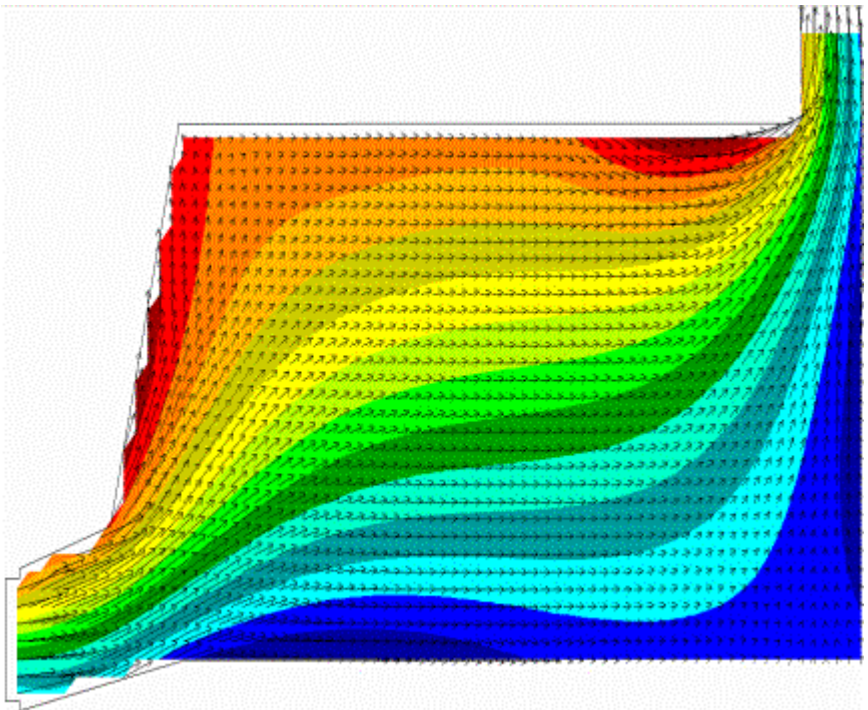
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Foreword

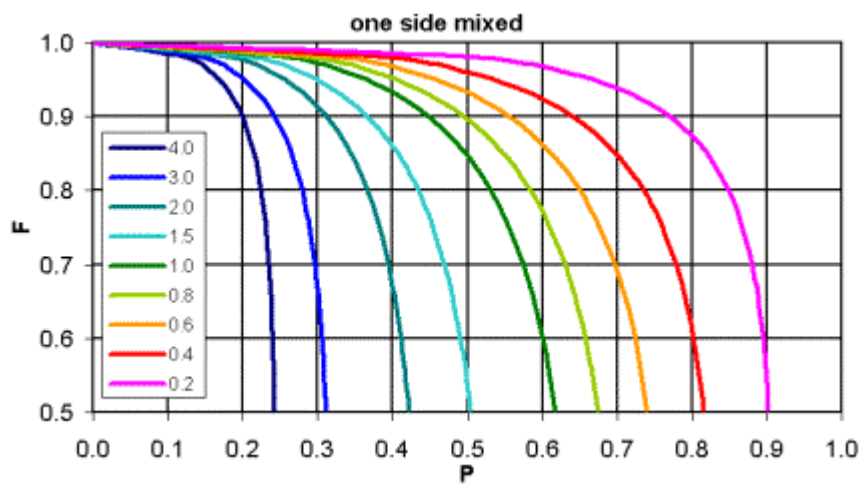
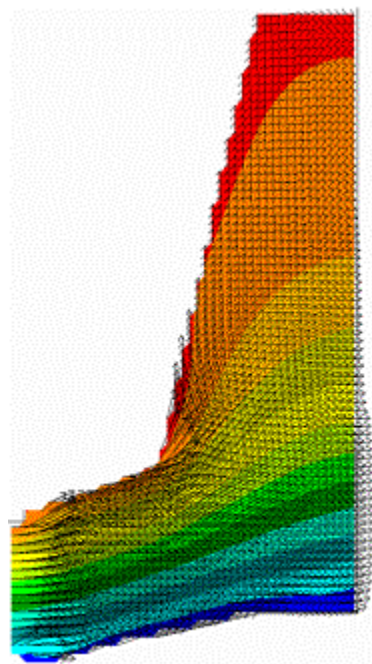
Heat recovery steam generators (HRSGs) are an integral part of any modern combined cycle power plant. These heat exchangers are designed to recover the heat from a gas turbine exhaust and convert this to steam, which drives a turbine and ultimately a second generator. Because the gas turbine operates efficiently at high temperatures and heat is removed down to nearly ambient temperature, the overall efficiency of this complex design exceeds that of conventional Rankine cycle coal-, oil-, or gas-fired systems. These systems can also be operated in simple or combined cycle, increasing flexibility and response to load dispatch. HRSG can be complex to analyze and also difficult to effectively test and prove their performance. This text covers both theory and testing in practice with examples.

*All of the examples contained in this book,
(as well as a lot of free programs) are available at...*

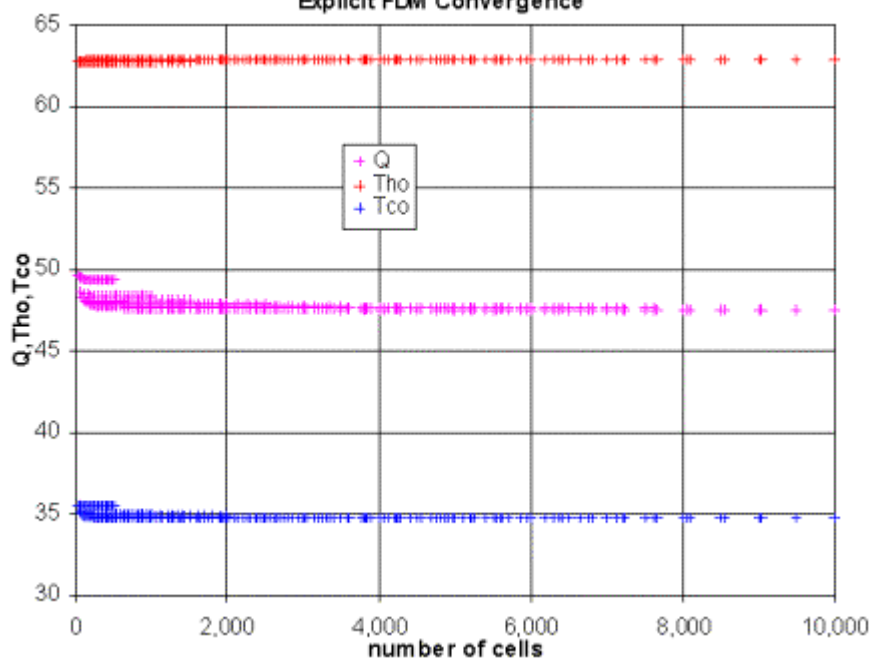
<http://www.dudleybenton.altervista.org/software/index.html>



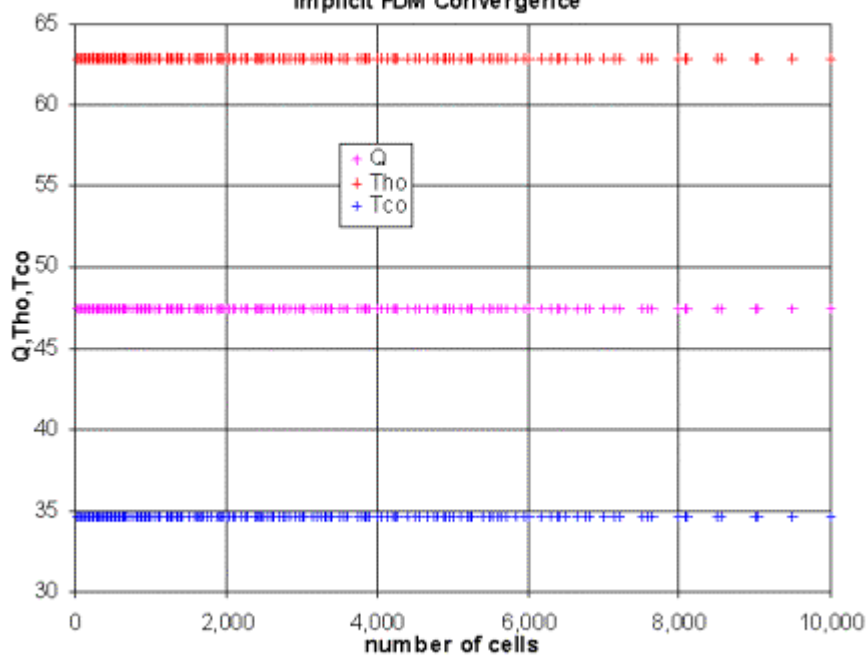




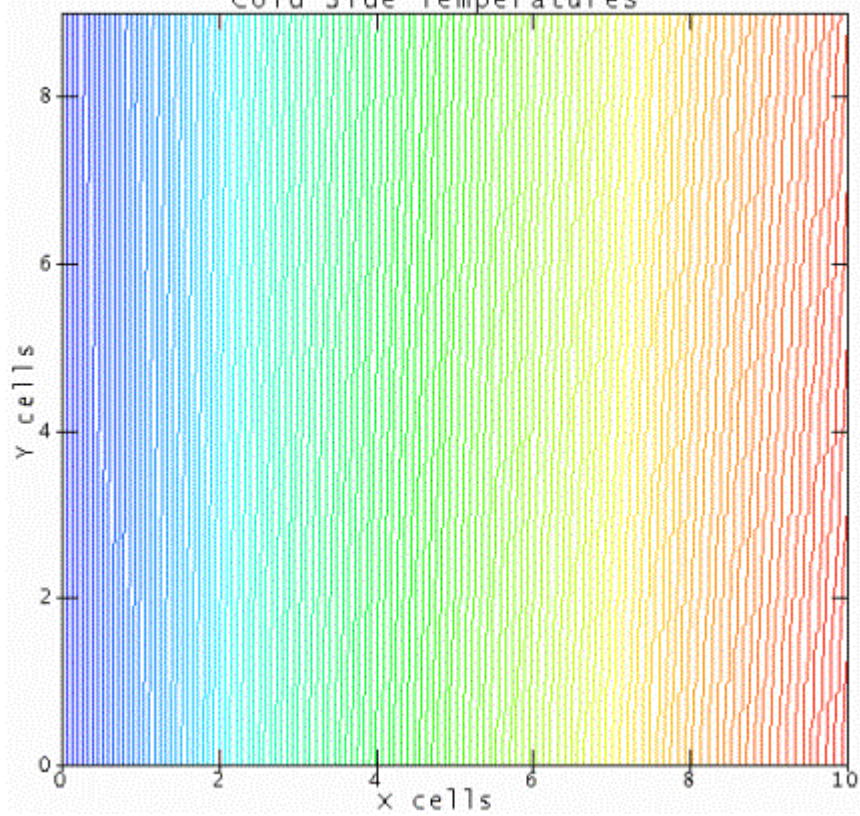
Explicit FDM Convergence

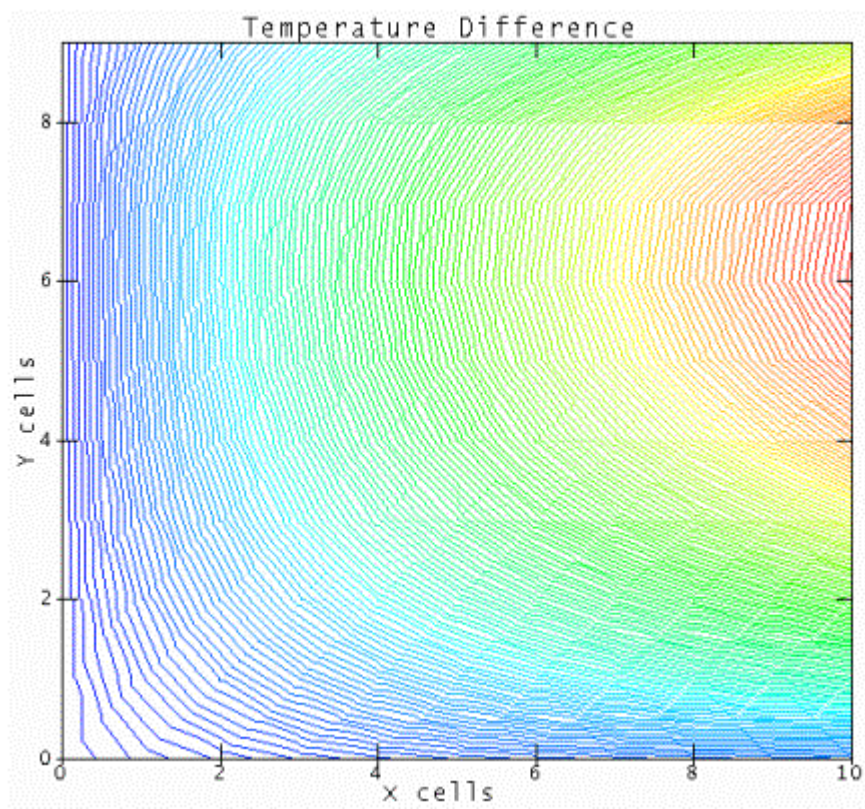


Implicit FDM Convergence

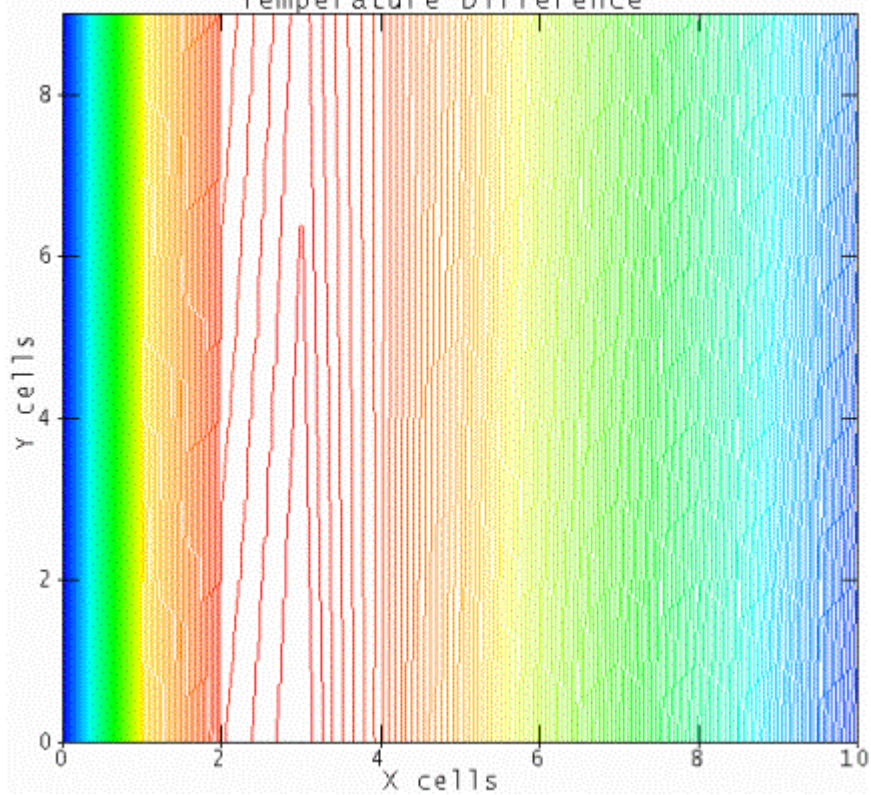


Cold Side Temperatures

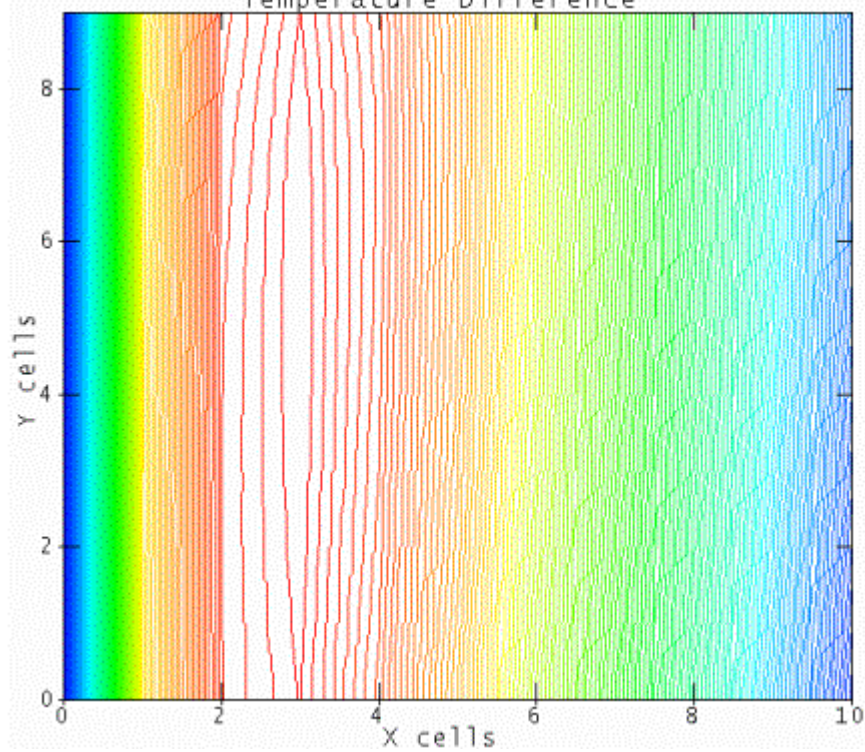


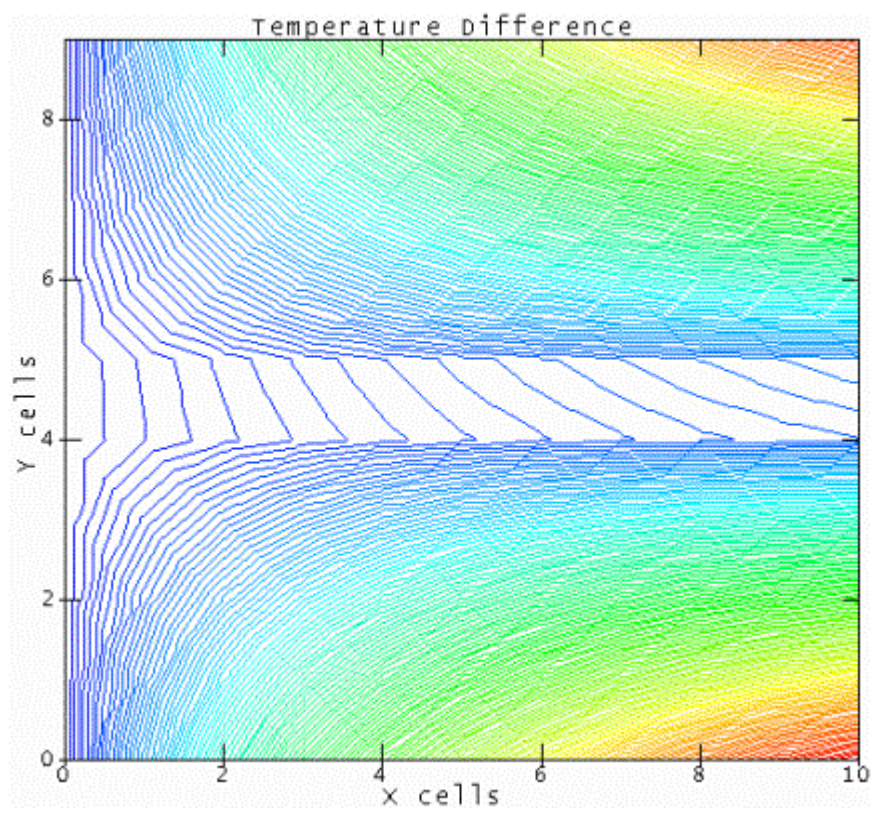


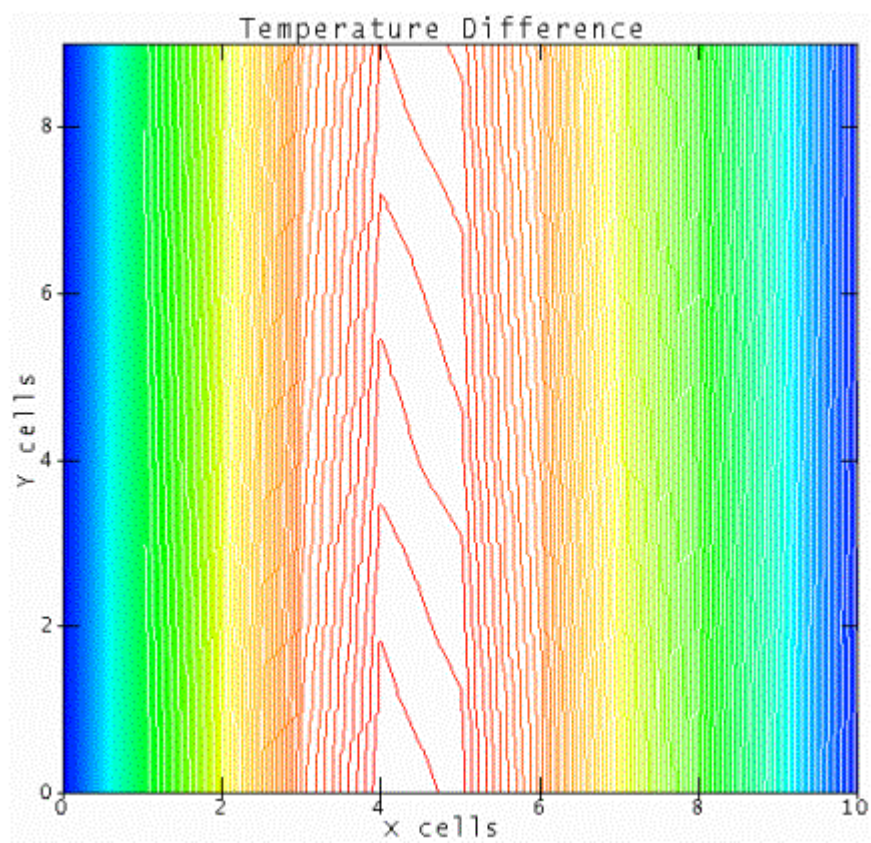
Temperature Difference

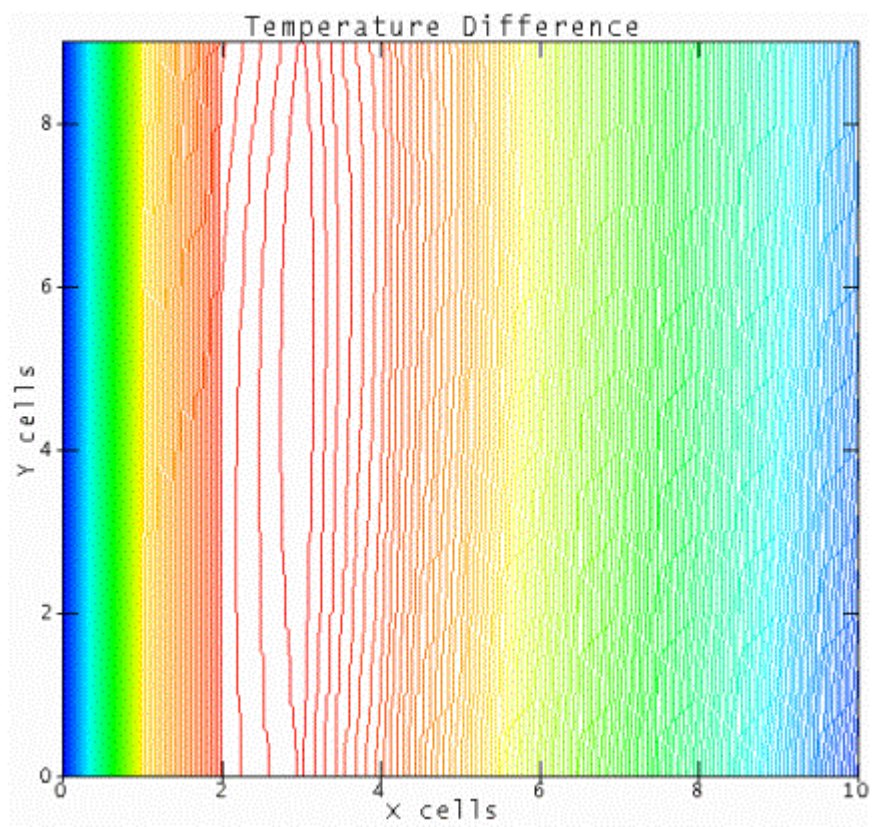


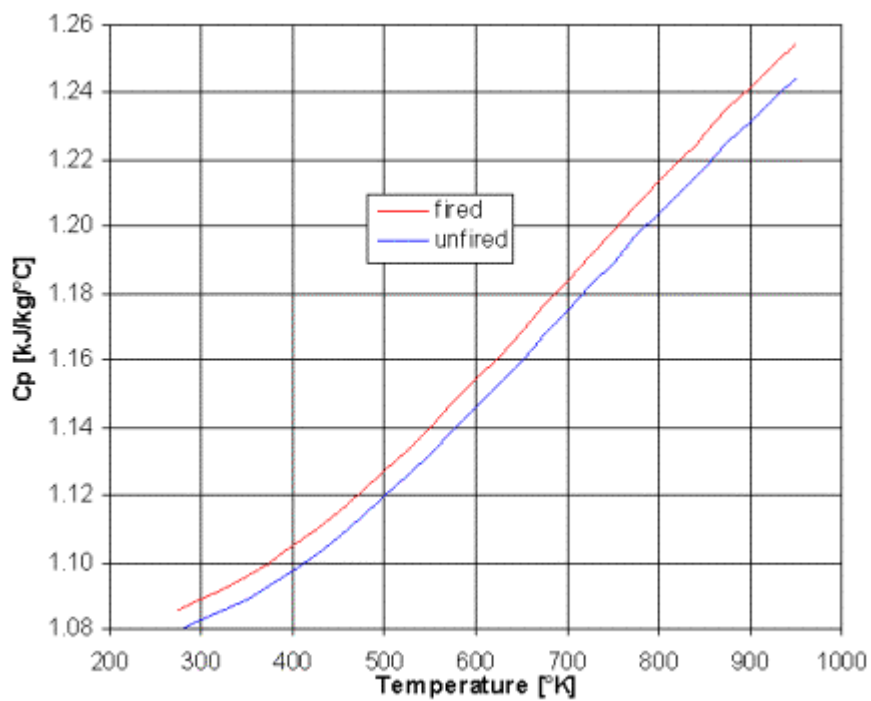
Temperature Difference

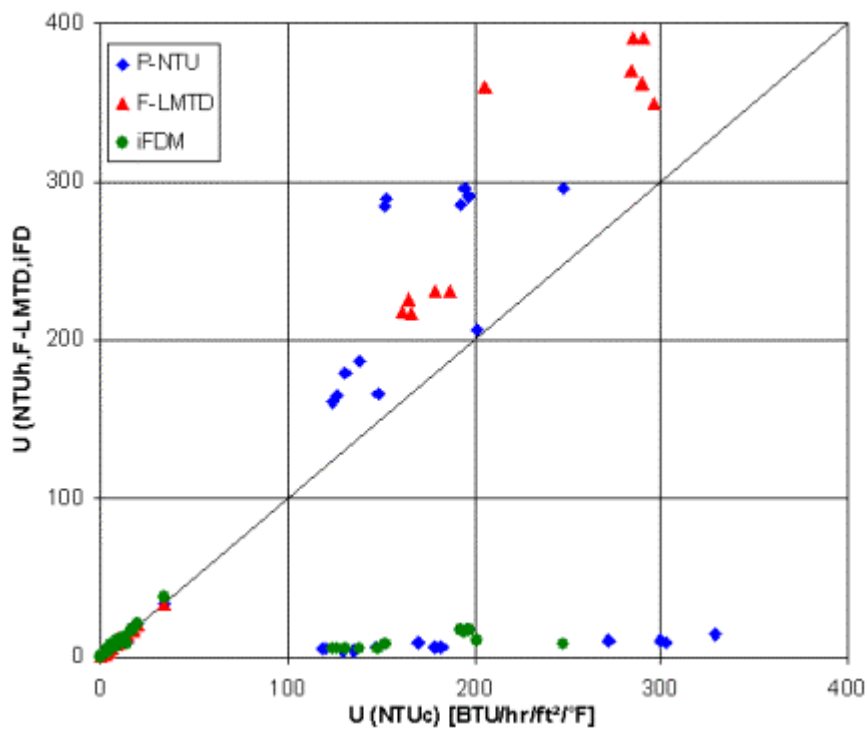


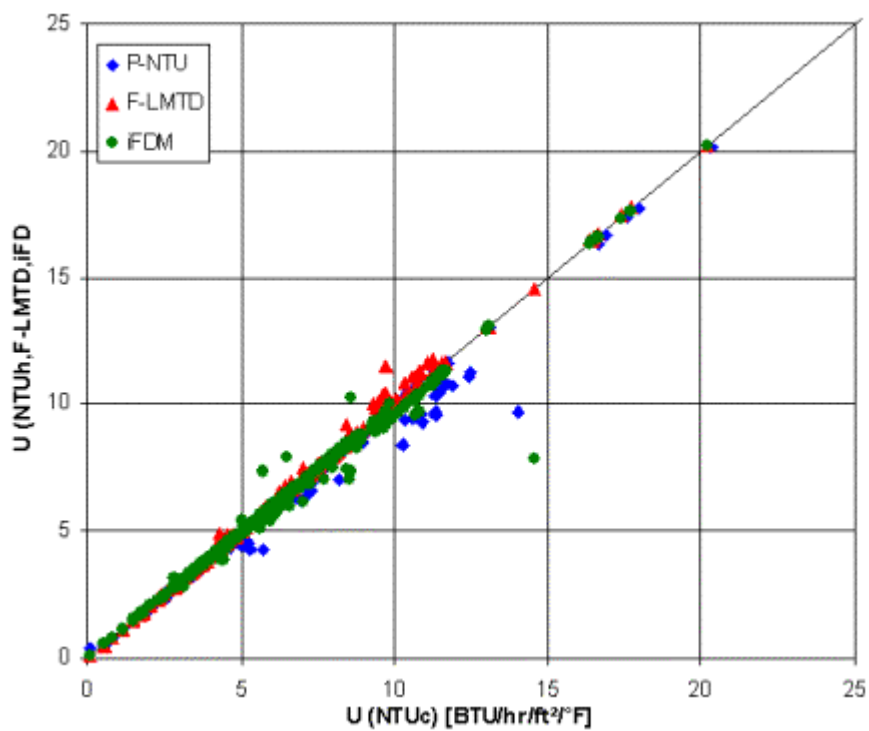


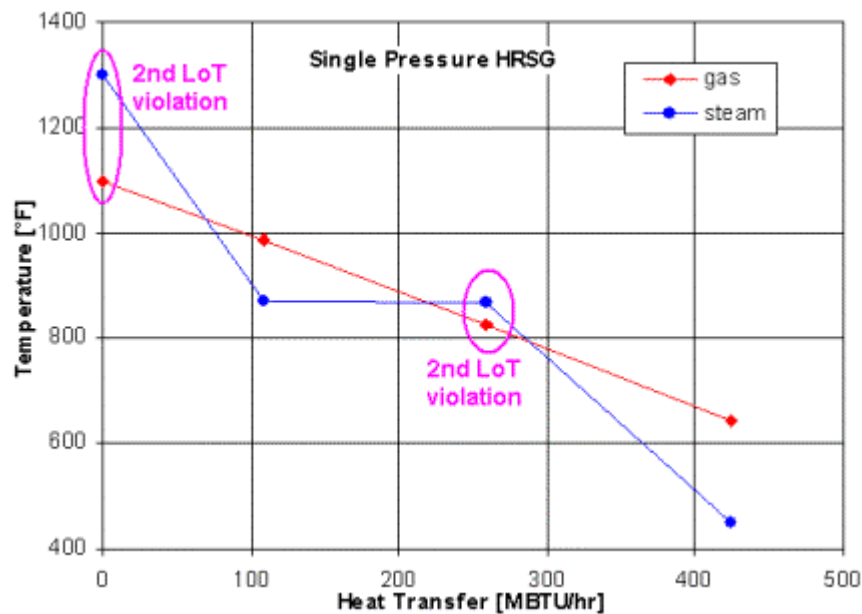
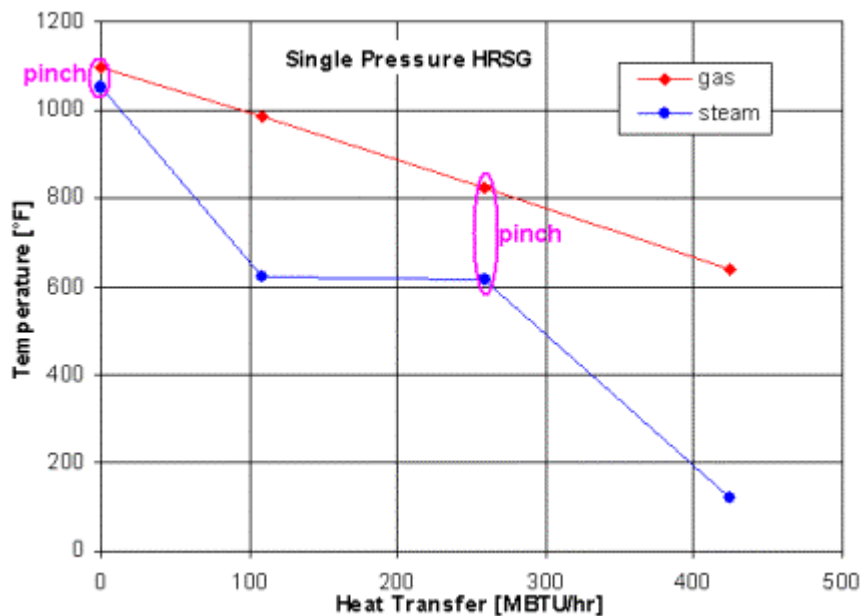




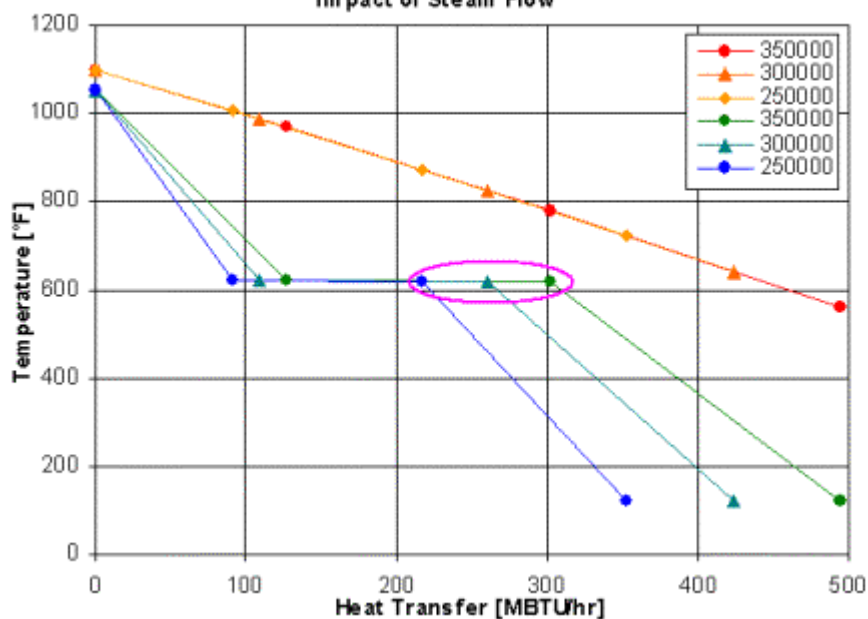




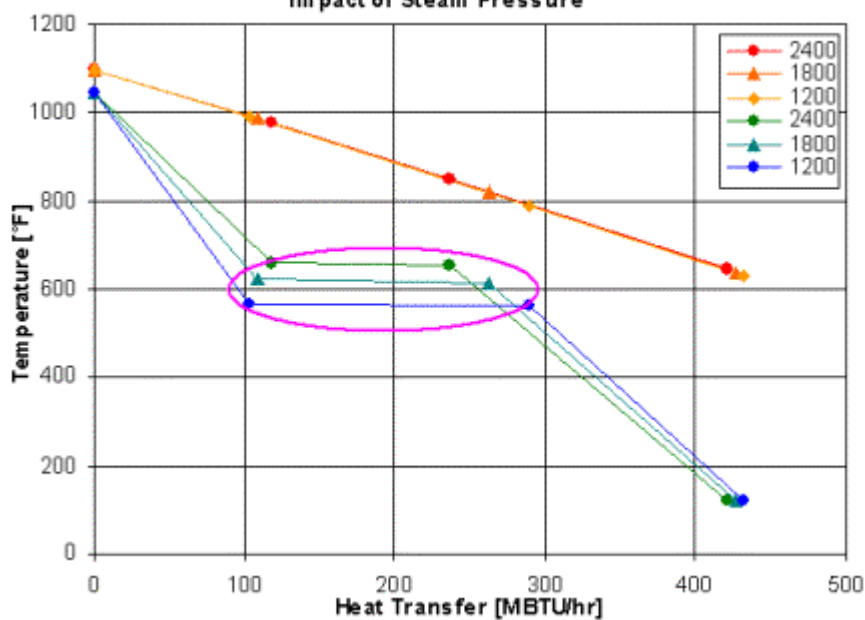




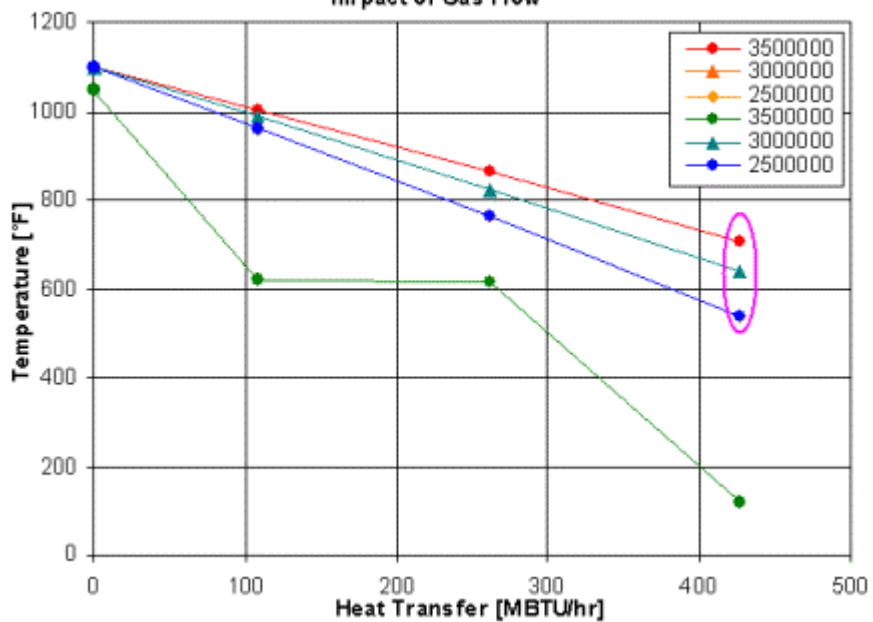
Impact of Steam Flow



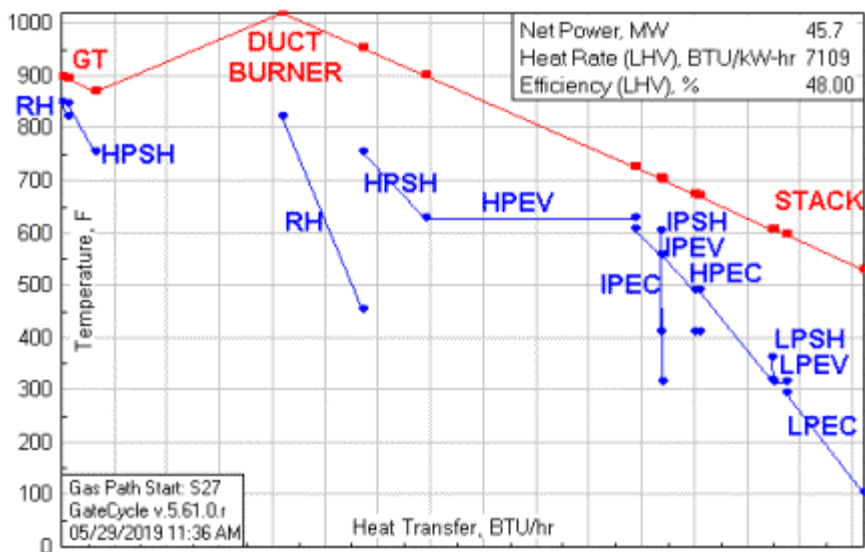
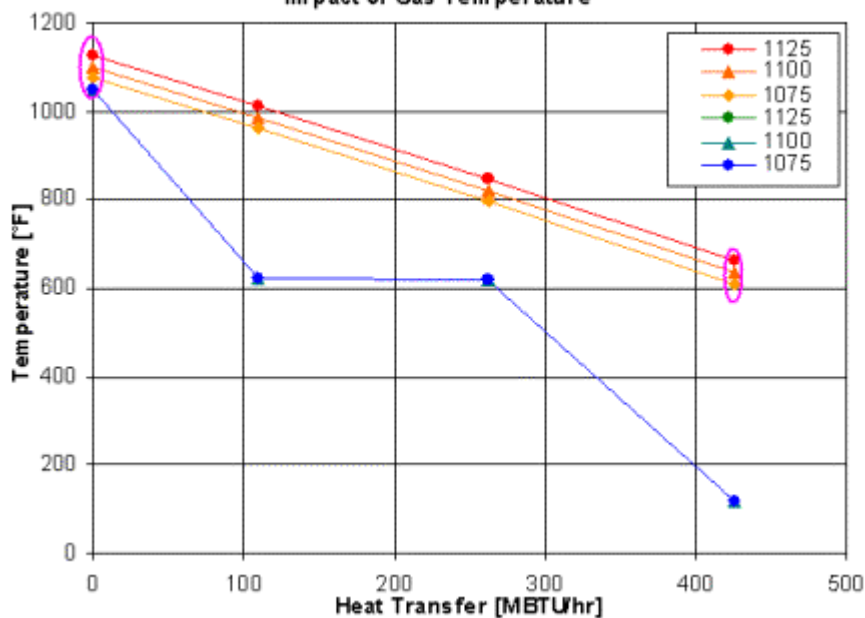
Impact of Steam Pressure

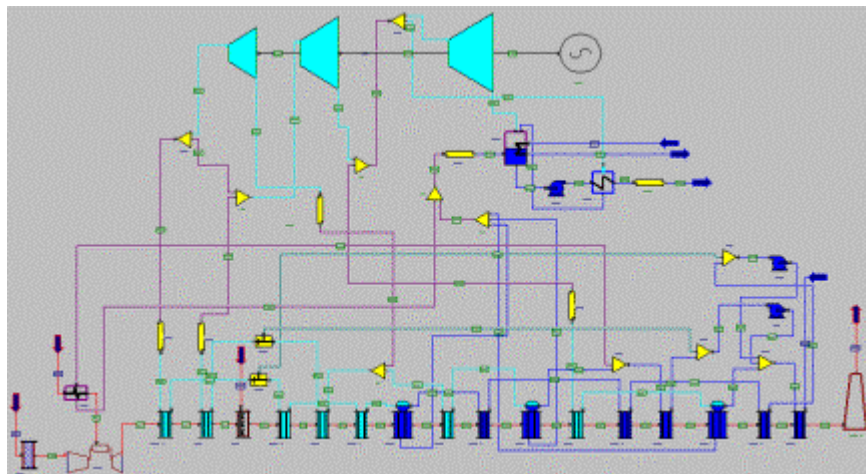
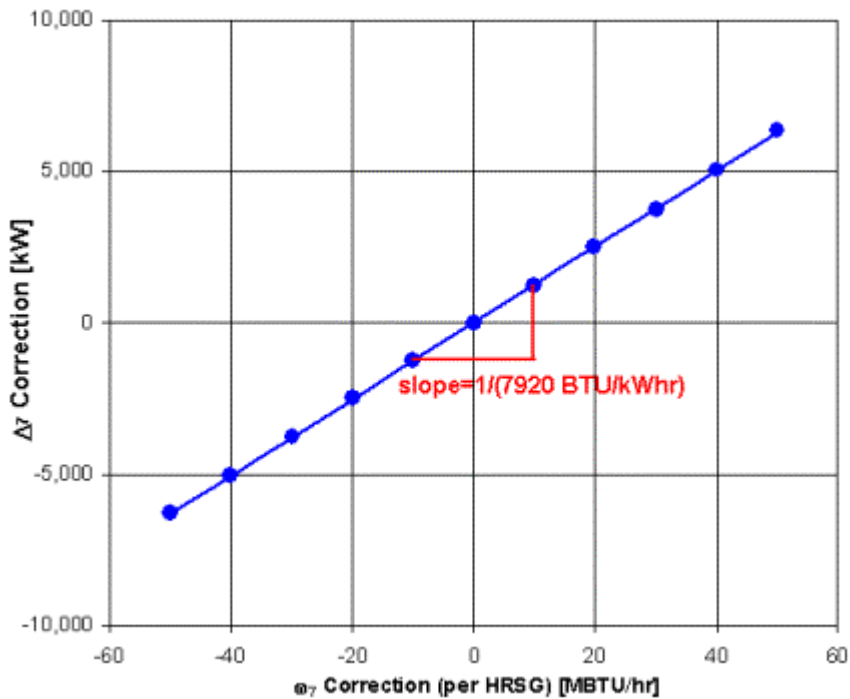


Impact of Gas Flow



Impact of Gas Temperature





Triple Pressure HRSG

