

Eastman Chemical Gasifier Run-Time Simulator

Vertical

- Manufacturing
- Pharmaceutical
- Healthcare
- Portfolio
- Logistics
- Financial
- Government
- Business

Genre

- Case Study
- Project Review
- White Paper
- Technology Overview

Client

Eastman Chemical



Situation

The ever-increasing demand for power along with high natural gas prices has pushed gasification technology to the front of the clean-coal technologies that are commercially available. Eastman Chemical Company formed Eastman Gasification Services Company in 2003 to offer our over 20 years of gasification operating experience to the power industry.

Gasification is a technology for converting carbonaceous feedstocks into clean synthetic gases of carbon monoxide and hydrogen that can then be converted to chemicals or combusted in a gas turbine for power.

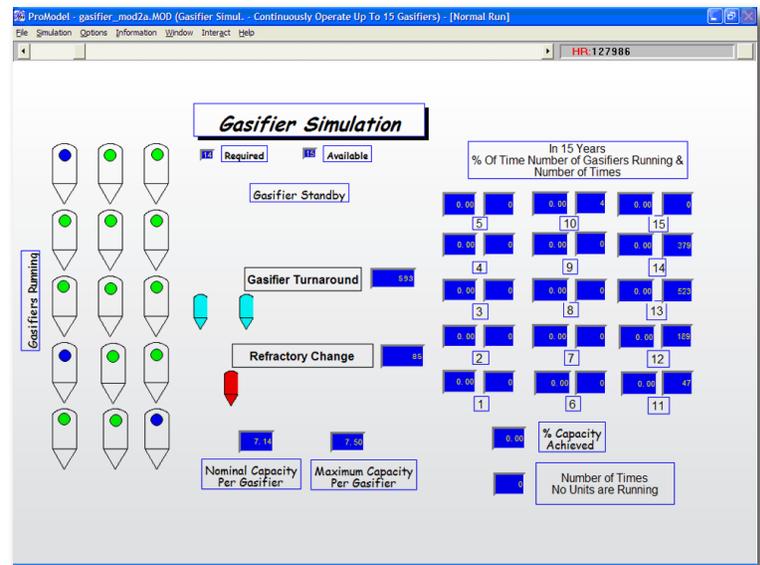
Predicting reliability for a multi-train gasification process is difficult due to the large number of operating parameters that can be varied. Hand calculations were almost impossible. Simulation rather than calculation became the preferred path forward.

Objectives

One of the questions that is always asked in the early stages is “how many gasifiers do I need to achieve ‘x’ level of reliability?”

Other critical questions the model helps to analyze include:

- What are the key operating parameters that most affect reliability for a multi-train gasifier system?
- How much redundancy is needed to ensure an acceptable overall reliability for the entire gasifier island?
- How many shutdowns and maintenance turn arounds can be expected over a 15-year life?



Results

The ProModel Simulator allows us to simulate multiple gasifier combinations (currently any combination up to 15) and determine the relative effect of key parameters on the overall reliability of a major process.

This enables Eastman to make better decisions around capital cost for redundancy and operating costs for maintenance staffing.

Other benefits derived from utilizing simulation to model this business include:

- New source of revenue for Eastman
- Ability to simulate potential operational changes without the expense and risk of plant trials.

This model was featured at the 2003 Gasification Technologies Council Conference in San Francisco, CA (www.gasification.org)

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