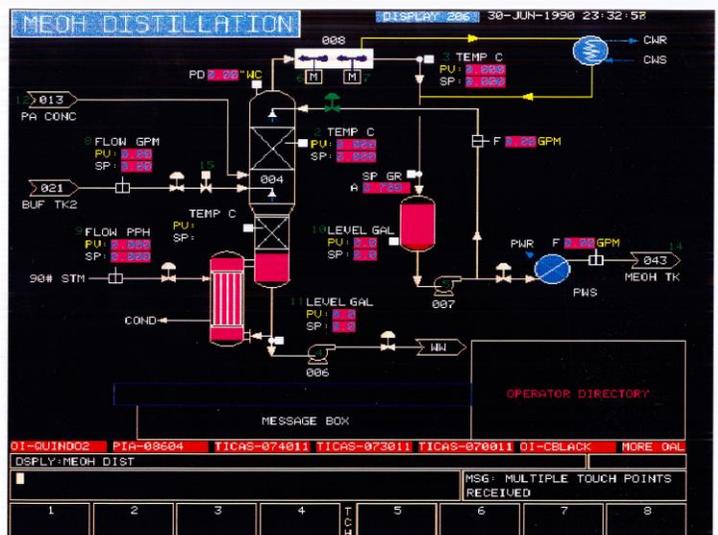


INTRODUCTION

Process Simulation and Modeling can be used in the fields of chemical processing and industrial engineering quite frequently, especially by Process Engineering firms. Process modeling engineering involves using computer modeling software's to design and test systems with interconnected components with multiple input and output streams, or a "process." Stream-based process simulation allow the ability to evaluate large multi-component processes that may also include internal recycle and reflux stream in order to develop a comprehensive mass and energy balance for the entire process. These software programs will apply combinations of various thermodynamic packages along with highly technical mathematical and chemical models of a process to resolve the interactive affects and converge the overall mass and energy balance for the entire process model.

Time Efficiency

Firms use process modeling software for a number of reasons. First, it is much faster to run calculations using the speed of a computer with relational databases and large libraries of physical and chemical property data for thousands of compounds as compared to an engineer working calculations the old fashioned way, with look-up charts, data tables, calculators, pencil and paper.



Intelligent Considerations & Recommendations

Process modeling software is able to consider multiple sets of process conditions and different stream compositions that impact the overall process and generate tables, charts and reports that can be used to evaluate how these various conditional changes impact product yields and energy balance in a faster, more accurate way. The software is able to reduce design uncertainty, help size required process equipment, help evaluate the impact of changing process conditions and the effect of changing stream compositions and achieve these outcomes faster with a high degree of accuracy. These model scenario outcomes can impact safety, cost, equipment sizing, operating conditions and time spent on projects; ultimately resulting in a superior return on investment (ROI) for the client's capital project.

Conclusion

Venture Engineering & Construction, Inc. uses ChemCAD process modeling software to provide fast, accurate and cost-efficient calculations and determinations to our clients. Venture has used process modeling software in a variety of consulting engineering and design projects for markets such as Chemical Processing, Oil & Gas, Biogas/Waste-To-Energy, Waste Water Processing and Power Generation. Additionally, Venture uses process modeling to aid in the development of custom oilfield and biogas equipment and gas conditioning systems that we design and manufacture.

