

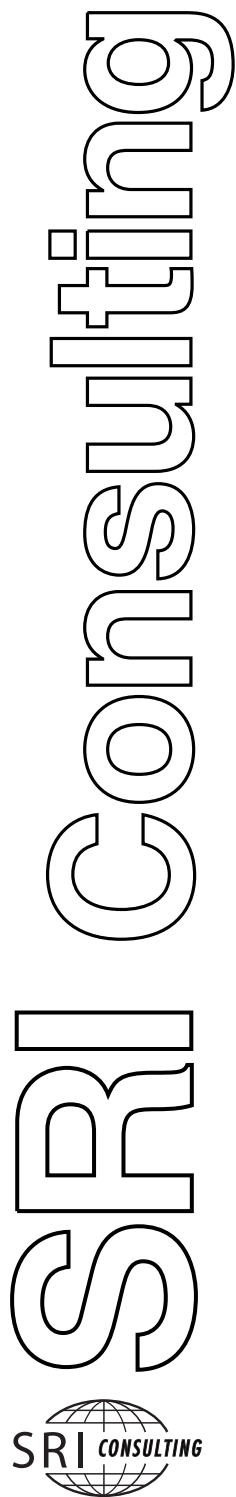
Abstract
Process Economics Program Report 145A
ESTIMATING PLANT INVESTMENT
(November 2005)

SRIC's Process Economics Program provides plant investment estimates for a wide range of chemicals, polymers, and refinery processes. The design and procurement methods used in these process industries have gone through a revolution with the growth of turnkey procurement, and the increasing integration of equipment suppliers and E&C firms.

The present report updates the algorithms and correlations used to estimate battery limits capital costs. It presents over 400 new cost correlations describing a wide range of battery limits equipment costs, direct installation costs, and indirect costs. The results of this effort are applicable to the oil refining, petrochemicals, and specialty chemical industries. These correlations are based in large part upon information provided by PEP client companies. All of the correlations presented here are based on non-confidential information. The goal of this project has been to prepare a cost estimation data set that will allow the preparation of Class 3 estimates with minimum design engineering effort.

In the course of setting the scope of this study, discussions with our clients indicated a need for educational and training materials on capital cost estimation for their junior engineers. In an effort to satisfy this need we have provided two "tutorial" chapters in this report. The first is a "Cost Estimation Boot Camp" which describes the basics of capital and operating cost estimation from a PEP point of view. The second comprises a series of solved examples demonstrating the use of parametric methods in solving practical business problems.

The approach and definitions used in the study are intended to be consistent with those laid out by the AACE International (Association for the Advancement of Cost Engineering). We present a discussion of the AACE classification system. We also examine the statistical basis for the phenomenon of error canceling in line item summing.



Report No. 145A

ESTIMATING PLANT INVESTMENT

by Mike Arne

November 2005

A private report by the
PROCESS ECONOMICS PROGRAM

Menlo Park, California 94025

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