AN ABSTRACT OF A THESIS

DESIGN METHODS FOR PARTIAL CONDENSERS

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Master of Science in Chemical Engineering

A design method for a partial condenser, based upon a modification of the methods of Colburn-Hougen and Bras, was presented. It was intended to be used with a mixture of a saturated or superheated vapor and a noncondensable gas. The mixtures were cooled and condensed in downflow inside a single-tube, vertical condenser. Cooling water flowed countercurrent to the mixture. The systems studied were air-water, helium-water, and carbon dioxide-water.

The theoretical model of the problem was programmed in the Fortran IV language for the Digital Equipment Corporation VAX 11/780 digital computer. The calculation was completely rigorous in computation of both the theoretical partial pressure-temperature path taken by the cooling mixture and the required design length. Reasonable agreement has been obtained with available experimental data.

DESIGN METHODS FOR PARTIAL CONDENSERS

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CERTIFICATE OF APPROVAL OF THESIS

DESIGN METHODS FOR PARTIAL CONDENSERS

by

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