

HANDBOOK OF PETROLEUM REFINING PROCESSES

THIRD EDITION



- Contains the latest technologies in the field of petroleum refining processes
- Contributors are drawn from the largest petroleum producers in the world
- Detailed description and review of process chemistry and thermodynamics, product and by-product specifications, wastes and emissions
- 50% new information over the Second Edition

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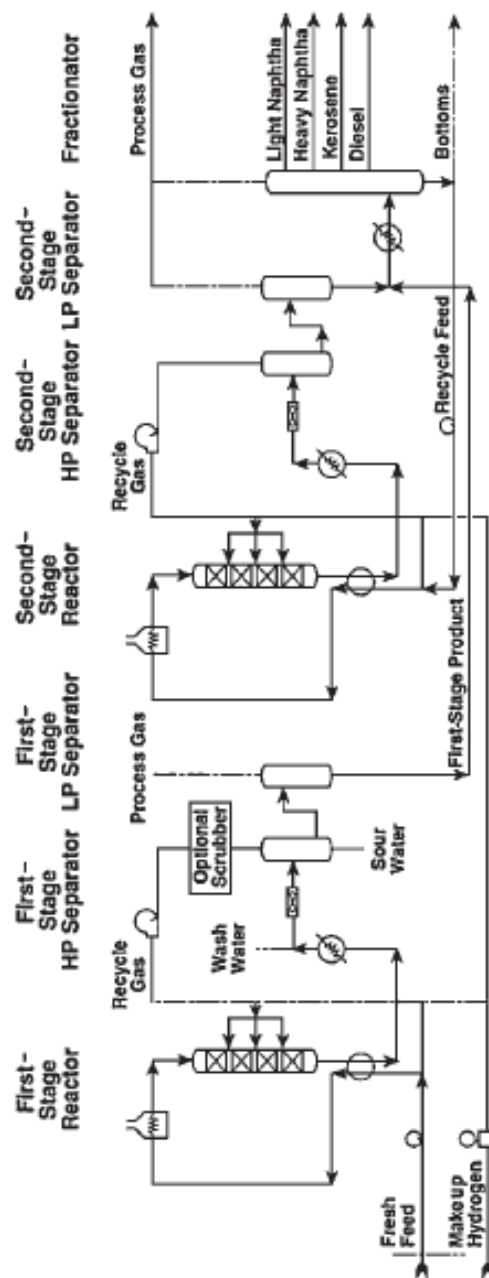


FIGURE 14.1.26 Simplified flow diagram of a Chevron Lummus Global two-stage Isocracker.¹²

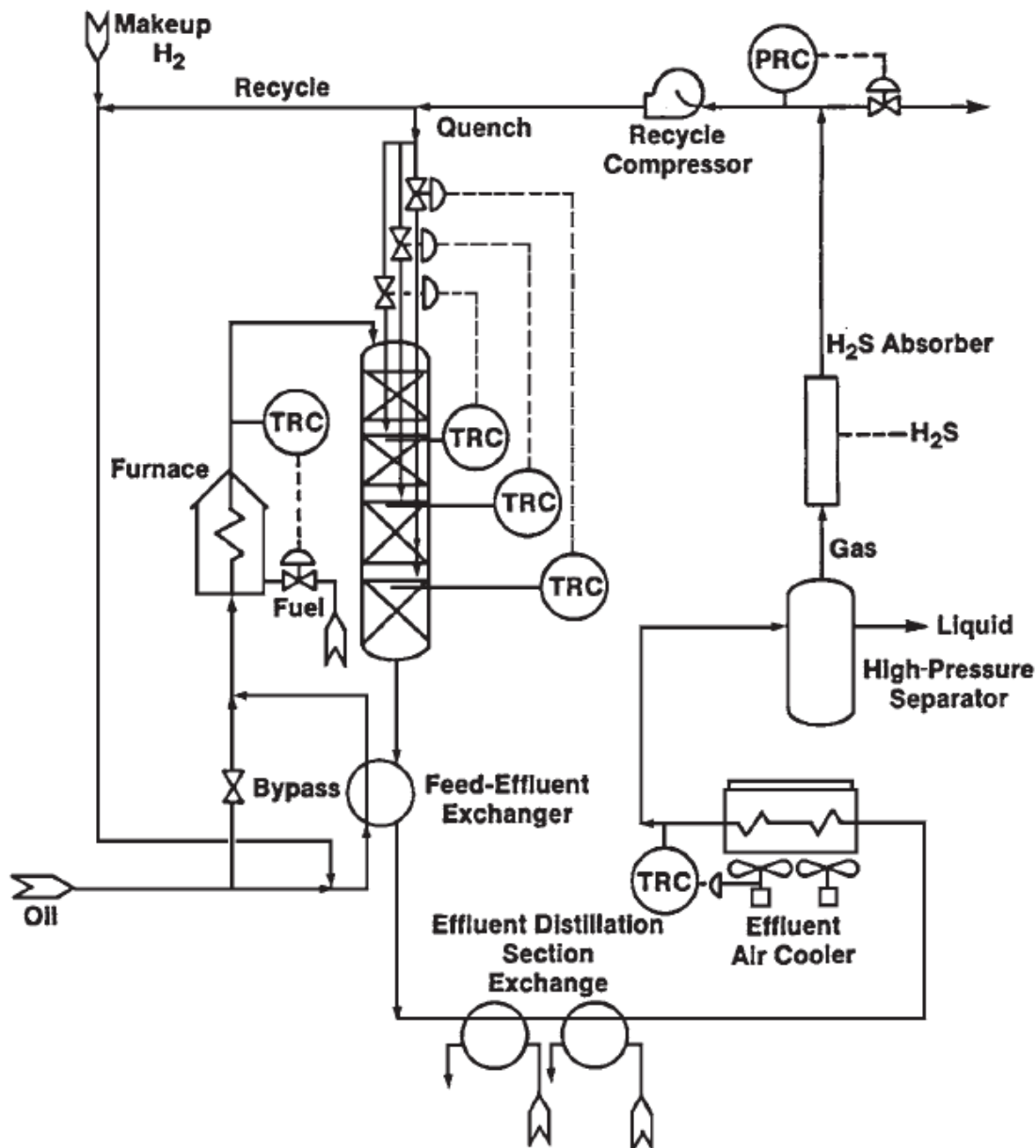


FIGURE 14.129 Control of a hydrocracker.³³

on this same feed can consume 1200 SCFB of hydrogen and make 108 volumes of C₅+ product out of 100 volumes of VGO feed. The maximum volume expansion is achieved in a recycle mode operating at an RCP of 700 to 735°F (which maximizes diesel fuel yield). More hydrogen can be consumed in a recycle hydrocracker if the RCP is dropped so that lighter products are made. An RCP of 550°F maximizes the production of jet fuel while consuming about 2000 SCFB of hydrogen. Motor gasoline yield is maximized at 380°F RCP and aromatics (via catalytic reforming) at somewhat lower RCP.

With more aromatic feedstocks, the amount of hydrogen consumed and the amount of expansion will be higher than shown. Scott, Mayer, and Meyer⁸⁹ have taken this representation even further by assuming the heavy naphtha produced by hydrocracking will usually be catalytically reformed, so that some hydrogen will be recovered. Also, the light gases produced in the hydrocracker can be used as feedstock to a hydrogen plant. Therefore they