SECTION 9

ENERGY BALANCE

The overall energy balance is illustrated in Figure 9-1. The results indicate that the energy value of products is approximately 820 billion Btu/day, which represents about 74% of the energy contained in the feed coal.

Figure 9-2 presents a simplified summary of the projected overall thermal efficiency factors including power generation, heat rate based on fuel gas, along with the process products and byproducts.

Figure 9-3 presents the thermal efficiencies for the process operations and for power generation separately. The process thermal efficiency, including the manufacture of fuel gas, is 74%. The power generation efficiency, based on the apportioned fuel gas required to generate the net electrical power for sale of 970 MW, is 43%.

PERCENT 2.15 3.47 3.47 .65 .65 .25.47 14.03 37.57 1.24 4.28 4.28 74.02 ğ BILLION Btu/D 23.50 210.43 20.03 7.28 279.33 163.67 412.13 13.65 13.65 15.65 46.01 181.82 011.92 1,096.87 ENERGY CONSUMED MINING AND PREARATION PROCESS OXYGEN GENERAL FACILITIES TOTAL ENERGY VALUE OF PRODUCT ENERGY DISTRIBUTION SNG LIQUID FUELS SULFUR Ammdnia Cake FUEL GAS TO STEAM & POWER TOTAL - AMMONIA ENERGY SOURCE COAL SULFUR POWER FOR SALE - COKE ENG -970 MW 394.5 MW 3,7E0.0 TPD 1,709.9 TPD 10,265.0 TPD 183.2 TPD 1,625.1 TPD WW L'ZE 1,392.2 MW 27.7 MW 14 M lb/hr 240.6 M Ib/hr POWER GENERATION general Facilities . 1,407.9 M lb/hr 150-pile STEAM 24.6 M lb/hr 163.87 NIMIA B1u/D 3.54 MMM Btu/D 46.91 MMM Btu/D 412.13 MMM Btu/D 13.65 MMiM Btu/D 2,000.9 M Ib/hr FUEL GAS 181.02 MIM Blu/D 1,250-pilg STEAM 1,217.7 M Ib/hr 50-psig STEAM POWER 625-prig STEAM 1,045.8 A lb/hr . . 362.1 M lb/hr 403.1 M lb/hr 1,663.1 M lb/hr OXYGEN PLANT **PROCESS PLANT** 226.6 M (b/hr WM E.E8 194.4 NW CDAL 50,000 TPD 1,096.87 MMM Btu/D 324.4 MM Blu/hr . 378.5 M (b/hr MINE AND PREPARATION 74.1 MW ltu/hr

9-2

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Figure 9-1 - Energy Balance

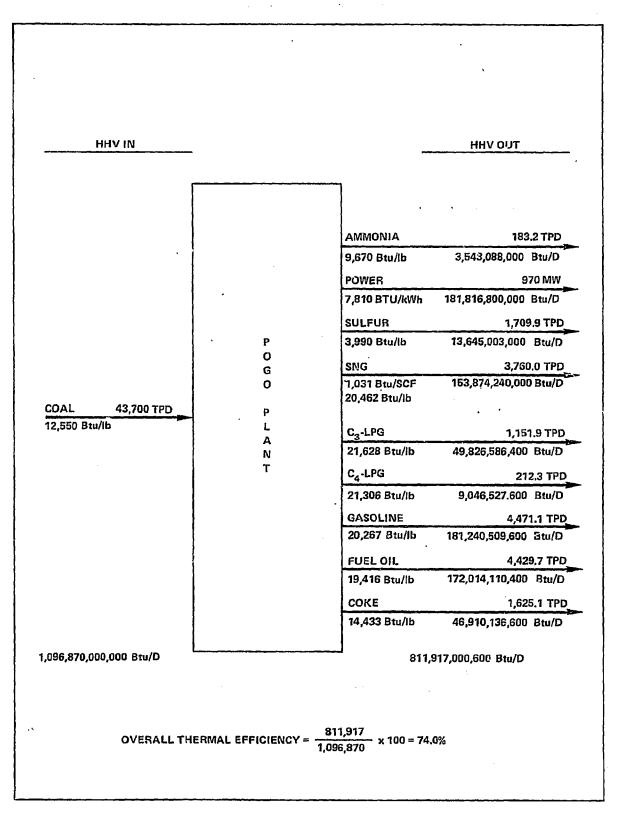
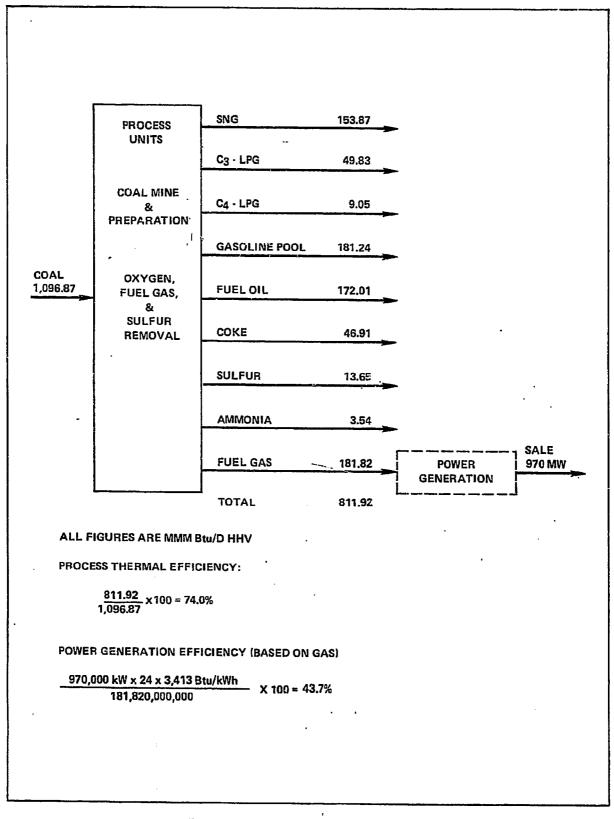


Figure 9-2 - Overall Thermal Efficiency

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Figure 9-3 - Projected Thermal Efficiencies

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