

ABSTRAK

PRARANCANGAN PABRIK KLOORIN DIOKSIDA DARI NATRIUM KLOORAT, ASAM SULFAT DAN HIDROGEN PEROKSIDA KAPASITAS 26.000 TON/TAHUN

(Perancangan Absorber 301 (AB-301))

Oleh

ISYAEBONI RAKASERI

Klorin dioksida merupakan senyawa anorganik yang digunakan sebagai *bleaching agent* dalam industri pulp, kertas dan tekstil menggantikan Cl_2 , *chloride* dan *hypochloride*. Klorin dioksida dapat diproduksi dengan beberapa cara antara lain: 1) Proses Solvay 2) Proses Mathiesson dan 3) Proses *Hydrogen Peroxide-Atmosphere*. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem penyediaan *steam*, *cooling water*, penyedia udara dan instrumentasi.

Kapasitas produksi pabrik klorin dioksida direncanakan sebesar 26.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di Karawang, Jawa Barat. Tenaga kerja yang dibutuhkan sebanyak 115 orang dengan bentuk badan usaha Perseroan Terbatas (PT) dengan struktur organisasi lini.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 400.891.056.119
<i>Working Capital Investment</i>	(WCI)	= Rp 70.745.480.492
<i>Total Capital Investment</i>	(TCI)	= Rp 471.636.536.610
<i>Break Even Point</i>	(BEP)	= 35,52%
<i>Shut Down Point</i>	(SDP)	= 11,58%
<i>Pay Out Time before taxes</i>	(POT) _b	= 2,99 tahun

<i>Pay Out Time after taxes</i>	(POT) _a	= 3,74 tahun
<i>Return on Investment before taxes</i>	(ROI) _b	= 42,59%
<i>Return on Investment after taxes</i>	(ROI) _a	= 34,71%
<i>Discounted cash flow</i>	(DCF)	= 42,11%

Berdasarkan beberapa paparan di atas, maka pendirian pabrik klorin dioksida ini layak untuk dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dari sisi ekonomi dan mempunyai prospek yang relatif baik.

ABSTRACT

PREDESIGN OF CHLORINE DIOXIDE FROM SODIUM CHLORATE, SULFURIC ACID AND HYDROGEN PEROXIDE WITH CAPACITY 26.000 TONS/YEARS

(Absorber 301 Design (AB-301))

By

ISYAEBONI RAKASERI

Chlorine dioxide is an organic compound that is used as a bleaching agent in the pulp, paper and textile industries to replace Cl_2 , chloride and hypochloride. Chlorine dioxide can be produced in several ways, including: 1) Solvay Process 2) Mathiesson Process and 3) Hydrogen Peroxide-Atmosphere Process. Provision of utility plant needs a treatment system and water supply, steam supply system, cooling water, air and instrumentation providers.

Capacity of the plant is planned to production chlorine dioxide is 26.000 tons/year with 330 working days in a year. The location of plant is planned in Karawang, West Java. Labor needed in this plant as many as 115 people with a business entity form Limited Liability Company (PT) with line organizational structure.

From the economic analysis are obtained :

<i>Fixed Capital Investment</i>	(FCI)	= Rp 400.891.056.119
<i>Working Capital Investment</i>	(WCI)	= Rp 70.745.480.492
<i>Total Capital Investment</i>	(TCI)	= Rp 471.636.536.610
<i>Break Even Point</i>	(BEP)	= 35,52%
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<i>Pay Out Time before taxes</i>	(POT) _b	= 2,99 years
<i>Pay Out Time after taxes</i>	(POT) _a	= 3,74 years

<i>Return on Investment before taxes</i>	(ROI) _b	=	42,59%
<i>Return on Investment after taxes</i>	(ROI) _a	=	34,71%
<i>Discounted cash flow</i>	(DCF)	=	42,11%

By considering above the summary, it is proper establishment of chlorine dioxide plant for studied further, because the plant is profitable and has good prospects future.