ABSTRAK

PRARANCANGAN PABRIK TRINATRIUM FOSFAT DARI DINATRIUM FOSFAT DAN NATRIUM HIDROKSIDA KAPASITAS 38.000 TON/TAHUN
Tugas Khusus Perancangan Reaktor - 201 (RE-201)

Oleh

FERINA SAFITRI

Trinatirum Fosfat merupakan salah satu produk industri kimia yang digunakan sebagai salah satu bahan kimia anorganik dalam industri pembuatan detergen dan sabun. Trinatrium Fosfat dapat di produksi dengan beberapa proses yaitu 1) proses dengan bahan baku Asam Fosfat, Natrium Karbonat dan Natrium Hidroksida, 2) Proses dengan bahan baku Asam Fosfat, Natrium Klorida, dan Natrium Hidroksida, dan 3) Proses dengan bahan baku Dinatrium Fosfat dan Natrium Hidroksida. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem penyediaan *steam*, sistem refrigerasi, sistem penyediaan udara tekan, dan sistem pembangkit tenaga listrik.

Kapasitas produksi pabrik direncanakan 38.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di kawasan industri Cikande Kabupaten Serang, Banten. Tenaga kerja yang dibutuhkan sebanyak 147 orang dengan bentuk badan usaha Perseroan Terbatas (PT) yang dipimpin oleh seorang Direktur Utama yang dibantu oleh Direktur Produksi dan Direktur Keuangan dengan struktur organisasi *line and staff.*

Dari analisis ekonomi diperoleh:

Fixed Capital Investment	(FCI)	=	Rp 422.140.145.199
Working Capital Investment	(WCI)	=	Rp 74.495.319.741
Total Capital Investment	(TCI)	=	Rp 496.635.464.939
Break Even Point	(BEP)	=	30,88%
Shut Down Point	(SDP)	=	14,11%
Pay Out Time before taxes	$(POT)_b$	=	1,43 years
Pay Out Time after taxes	$(POT)_a$	=	1,72 years
Return on Investment before taxes	$(ROI)_b$	=	51,08%
Return on Investment after taxes	$(ROI)_a$	=	40,86%
Discounted cash flow	(DCF)	=	48,25%

Mempertimbangkan rangkuman di atas, sudah selayaknya pendirian pabrik Trinatrium Fosfat ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.

ABSTRACT

DESIGN OF TRINATRIUM PHOSPHATE FACTORY FROM DYNATRIUM PHOSPHATE WITH SODIUM HYDROXIDE CAPACITY 38.000 TON/YEAR
Reactor Design Special Task - 201 (RE-201)

By

FERINA SAFITRI

Trinatirum Phosphate is a chemical industry product that is used as an inorganic chemical in the detergent and soap manufacturing industry. Trisodium Phosphate can be produced in several processes, namely 1) process with phosphoric acid, sodium carbonate and sodium hydroxide, 2) process with phosphoric acid, sodium chloride and sodium hydroxide, and 3) disodium phosphate and disodium phosphate as raw materials. Sodium hydroxide. Provision of factory utility needs in the form of water treatment and supply systems, steam supply systems, refrigeration systems, compressed air supply systems, and power generation systems.

The factory's production capacity is planned to be 38,000 tons/year with 330 working days in 1 year. The factory location is planned to be established in the Cikande industrial area, Serang Regency, Banten. The required workforce is 147 people with the form of a Limited Liability Company (PT) business entity led by a Main Director who is assisted by the Director of Production and the Director of Finance with a line and staff organizational structure..

From the economic analysis obtained:

Fixed Capital Investment	(FCI)	=	Rp 422.140.145.199
Working Capital Investment	(WCI)	=	Rp 74.495.319.741
Total Capital Investment	(TCI)	=	Rp 496.635.464.939
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Considering the above summary, it is appropriate that the establishment of this Trisodium Phosphate plant should be studied further, because it is a profitable factory and has good prospects.