ABSTRAK

PRARANCANGAN PABRIK *SODIUM THIOSULFATE PENTAHYDRATE* DARI *SODIUM SULFITE* DAN *SULFUR* DENGAN KAPASITAS 20.000 TON/TAHUN
(Perancangan Evaporator (EV-301))

Oleh

NAUFAL PANGESTU UTOMO

Pabrik *Sodium Thiosulfate Pentahydrate* berbahan baku *Sodium Sulfite* dan *Sulfur* direncanakan dididrikan di Teluk Jambe Timur, Karawang, Jawa Barat. Pendirian pabrik didasarkan atas kebutuhan dalam negeri yang meningkat setiap tahun dan belum tersedianya pabrik yang memproduksi *Sodium Thiosulfate Pentahydrate*.

Sodium Thiosulfate Pentahydrate merupakan produk industri kimia yang digunakan sebagai mordan dan *bleaching* pada industri tekstil, pencuci di bidang fotografi, reagen di laboratorium, sebagai bahan pengkelat, dan pada industri farmasi digunakan sebagai antidotum keracunan sianida

Pabrik direncanakan memproduksi *Sodium Thiosulfate Pentahydrate* sebanyak 20.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Penyediaan kebutuhan utilitas pabrik terdiri dari unit pengolahan dan penyedia air, unit penyedia *steam*, unit penyedia udara, dan unit pembangkit tenaga listrik.

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 155 orang.

Dari analisis ekonomi diperoleh :

Fixed Capital Investment	(FCI)	= Rp 515.195.363.941,-*Working*
Capital Investment	(WCI)	= Rp 90.916.828.930,-
Total Capital Investment	(TCI)	= Rp 606.112.192.871,-
Break Even Point	(BEP)	= 47 %
Shut Down Point	(SDP)	= 20 %
Pay Out Time before Taxes	$(POT)_b$	= 3,17 tahun
Pay Out Time after Taxes	$(POT)_a$	= 3,68 tahun
Return on Investment before Taxes	$(ROI)_b$	= 18 %
Return on Investment after Taxes	$(ROI)_a$	= 15 %
Discounted Cash Flow	(DCF)	= 19,89 %

Mempertimbangkan paparan di atas, sudah selayaknya pendirian pabrik *Sodium thiosulfate pentahydrate* ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dari sisi ekonomi dan mempunyai prospek yang relatif cukup baik.

ABSTRACT

MANUFACTURE OF SODIUM THIOSULFATE PENTAHYDRATE FROM SODIUM SULFITE AND SULFUR CAPACITY 20.000 TON/YEAR
(Design of Evaporator (EV-301))

By

NAUFAL PANGESTU UTOMO

The Sodium Thiosulfate Pentahydrate plant made from Sodium Sulfite and Sulfur is planned to be built in Teluk Jambe Timur, Karawang, West Java. The establishment of the factory was based on domestic demand that increased every year and the absence of a factory producing Sodium Thiosulfate Pentahydrate.

Sodium Thiosulfate Pentahydrate is a chemical industrial product that is used as a mordant and bleaching in the textile industry, washing in the field of photography, a reagent in the laboratory, as a chelating agent, and in the pharmaceutical industry is used as an antidote for cyanide poisoning.

The factory is planned to produce 20,000 tons/year of Sodium Thiosulfate Pentahydrate, with an operating time of 24 hours/day, 330 days/year. The provision of factory utility needs consists of processing and water supply units, steam supply units, air supply units, and power generation units.

The form of the company is a Limited Liability Company (PT) using a line and staff organizational structure with a total of 155 employees.

From the economic analysis are obtained :

Fixed Capital Investment	(FCI)	= Rp 515.195.363.941,-
Working Capital Investment	(WCI)	= Rp 90.916.828.930,-
Total Capital Investment	(TCI)	= Rp 606.112.192.871,-
Break Even Point	(BEP)	= 47 %
Shut Down Point	(SDP)	= 20 %
Pay Out Time before Taxes	(POT)b	= 3,17 years
Pay Out Time after Taxes	(POT)a	= 3,68 years
Return on Investment before Taxes	(ROI)b	= 18 %
Return on Investment after Taxes	(ROI)a	= 15 %
Discounted Cash Flow	(DCF)	= 19,89 %

Considering the explanations above, it is appropriate that the establishment of the Sodium thiosulfate pentahydrate factory be studied further, because it is a plant that is profitable from an economic standpoint and has relatively good prospects.