## ABSTRAK

Dalam industri pengolahan minyak, khususnya di *Plant Texturizing*, penggunaan *system refrigerant* amoniak sebagai media pendingin memiliki peranan vital dalam menjaga stabilitas suhu dan kualitas produk. Dalam *system* pendingin, *refrigerant* berfungsi sebagai media perpindahan panas, menyerap panas pada tekanan rendah melalui *evaporator* dan melepaskannya pada tekanan tinggi melalui kondensor. *System refrigerant* adalah metode untuk menyelesaikan proses penghilangan panas dari suatu produk untuk menurunkan suhunya. *System* pendingin yang efisien menjadi kunci dalam memastikan proses produksi berjalan lancar serta menghasilkan produk dengan standar mutu yang tinggi. Salah satu komponen utama dalam *system* tersebut adalah kondensor. *System refrigerant* amoniak di *plant teturizing* terbagi atas komponen utama seperti kompresor, kondensor, *receiver*, *expansi valve*, *perfector* dan *liquid separator*. Hal yang akan dicapai dari penelitian ini yaitu untuk mendapatkan faktor-faktor yang mempengaruhi efisiensi kerja kondensor seperti (tekanan, temperature, dan media pendinginnya) dan kondisi lingkungan, serta mengevaluasi kontribusinya terhadap performa keseluruhan *system* pendingin. Data hasil pencatatan berupa tekanan dan temperatur maka kesimpulan yang bisa diambil dalam selama 10 hari pengambilan data performa *system refrigerant* amoniak berbeda-beda tergantung tekanan dan temperatur. Dari data yang telah dianalaisis dapat disimpulkan bahwa pengoperasian yang bagus terjadi pada pengambilan data hari ke 5 dengan kerja kompresor terendah dengan nilai sebesar 304.1 kJ/kg, nilai buang kondensor nya sebesar 1414.6 kJ/kg dan nilai efisiensi kerja sistem pendinginnya sebesar 91%.



**Kata kunci :** *Refrigerant* amoniak,Temperatur,Kerja kompresor, Panas buang, Efisiensi

***ANALYSIS OF AMONIAC REFRIGRANT SYSTEM ON CONDENSER PERFORMANCE AS AN OIL COOLING MEDIA IN TEXTURIZING PLANT***

## *ABSTRACT*

*In the oil processing industry, especially in the Texturizing Plant, the use of an ammonia refrigerant system as a cooling medium has a vital role in maintaining temperature stability and product quality. In a cooling system, the refrigerant functions as a heat transfer medium, absorbing heat at low pressure through the evaporator and releasing it at high pressure through the condenser. A refrigerant system is a method to complete the process of removing heat from a product to lower its temperature. An efficient cooling system is the key to ensuring the production process runs smoothly and produces products with high quality standards. One of the main components in the system is the condenser. The ammonia refrigerant system in the teturizing plant is divided into main components such as the compressor, condenser, receiver, expansion valve, perfector and liquid separator. What will be achieved from this research is to obtain factors that influence condenser work efficiency such as (pressure, temperature and cooling medium) and environmental conditions, as well as evaluating their contribution to the overall performance of the cooling system. The recorded data is in the form of pressure and temperature, so the conclusions that can be drawn during the 10 days of collecting data on the performance of the ammonia refrigerant system vary depending on the pressure and temperature. From the data that has been analyzed, it can be concluded that good operation occurred on the 5th day of data collection with the lowest compressor work with a value of 304.1 kJ/kg, the condenser exhaust value was 1414.6 kJ/kg and the cooling system work efficiency value was 91%.*

*Keywords : Refrigerant ammonia, Temperature, Compressor work, Exhaust heat, Efficiency*