

## INTISARI

Perkembangan zaman yang semakin modern, terutama perkembangan di bidang pembangunan industri, baik itu di bidang *oil & gas plant*, *petrochemical plant* dan *power plant* sangat membutuhkan teknologi yang dapat mempermudah perancangan suatu *general plant*. Perancangan menggunakan *software* memungkinkan untuk dilakukan simulasi pemodelan sebelum sebuah konstruksi perpipaan dimulai. Hal ini akan mempercepat tahap konstruksi dan meminimalisir terjadinya kesalahan desain. *Software SmartPlant 3D (SP3D)* merupakan salah satu aplikasi yang dapat digunakan dalam proses pemodelan suatu *general plant*.

Data pemodelan dengan menggunakan *software SP3D* yaitu gambar 2D meliputi *equipment*, *P&ID*, *general plant*, *equipment location*, dan *piping isometric*. Setelah melakukan pemodelan maka langkah selanjutnya yaitu menentukan berat komponen sistem perpipaan, rangka dan *equipment*. Berat komponen sistem perpipaan dan *equipment* dapat diketahui menggunakan aplikasi *Pipedata-Pro* versi 12.1.09.

Hasil pemodelan menggunakan *software SmartPlant 3D (SP3D)* versi 2014 R1 yaitu gambar 2D dan 3D *equipment* meliputi *equipment D1201 reflux drum*, *C1101 cracking tower*, *E1301 reboiler*, *E1302A/B stabilizer reflux condenser*, *P1501A/B reflux pumps*, *P1502A/B over head product pumps*, sedangkan pemodelan pipa menghasilkan gambar 3D dan *isometric* pipa yang meliputi pipa 100-B-A3B-1, 100-B-A3B-2, 150-A-A1A-3, 200-B-A3B-4, 250-B-A3B-5, 150-B-A3B-6, 80-B-A3B-7, 100-B-A3B-8, 50-B-A3B-9, 40-B-A3B-10, 80-A-A1A-11, 100-C-F1C-12, 100-C-F1C-13, 150-A-A1A-57. Hasil *reports* lain dari SP3D berupa *material take-off (MTO)* meliputi komponen *piping*, *fittings*, *valves*, *flanges*, *bolts* dan *gasket*. Adapun total hasil perhitungan berat meliputi berat komponen perpipaan, berat rangka dan berat *equipment* yaitu 60.604,09 kg

**Kata kunci** : Pemodelan, *Software SmartPlant 3D (SP3D)* versi 2014 R1, *Equipment*, *Piping*, *General Plant*

## ABSTRACT

*The development of the modern era, especially development in the field, in oil & gas plant, petrochemical plant and power plant need technology that can simplify the design of a general plant. The planner using software allowed to do modelling simulation before construction of pipe started. It will accelerate construction stage and minimize of the mistake design. Software SmartPlant 3D (SP3D) is one of the application that can be used in the process of the modelling in a general plant.*

*The modelling data use software SP3D its a 2D picture includes equipment, P&ID, general plant, equipment location, and piping isometric. After doing modelling, the next step is determine the weight component system of pipe, construction and equipment. The weight of component system pipe and equipment can be known using Pipedata-pro application 12.1.01 version.*

*The result of the modelling using software SmartPlant 3D (SP3D) 2014 R1 version is a 2D and 3D equipment include equipment D1201 reflux drum, C1101 cracking tower, E1301 reboiler, E1302A/B stabilizer reflux condenser, P1501A/B reflux pumps, P1502A/B over head product pumps, meanwhile pipe modelling produce of 3D picture and piping isometric include 100-B-A3B-1, 100-B-A3B-2, 150-A-A1A-3, 200-B-A3B-4, 250-B-A3B-5, 150-B-A3B-6, 80-B-A3B-7, 100-B-A3B-8, 50-B-A3B-9, 40-B-A3B-10, 80-A-A1A-11, 100-C-F1C-12, 100-C-F1C-13, 150-A-A1A-57. The result of other reports of SP3D is material take-off (MTO) include component piping, fittings, valves, flanges, bolts and gasket. The result of the weight includes weight component of the pipe, weight of construction and weight of equipment is 60.604,09 kg*

**Key words :** *Modelling, Software SmartPlant 3D (SP3D) R1 2014 version, Equipment, Piping, General Plant*