Penilaian resiko tangki timbun dengan metode analisa kualitatif berdasarkan standar American Petroleum Institute (API 581) di Plant SBN PT. "ABC" = Storage tanks risk assessment by using qualitative risk assessment method of American Petroleum Institute (API 581) standard at SBN Plant of PT. "ABC"

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Abstrak

Proses pengolahan gas di Plant SBN adalah sebuah pabrik yang mempunyai bahaya cukup tinggi. Kandungan gas alam yang didalamnya terdapat gas atau matcri pengotor seperti H2O, C02, H28 dan pengotor lainnya akan menyebabkan peralatan cepat mengalami kerusakan (teijadi korosi, penipisan dan retak). I-Iasil dari prosess produksi berupa gas, kondensaie dan sisa air produksi mempunyai tingkat bahaya yang berbeda. Disamping itu apabila gas tersebut bocor atau keluar dan terpapar ierhadap pekerja atau lingkungan dapat berakibat fatal. Penelitian ini berupa penilaian resiko yang bersifat analitis deslcritif dengan melakukan analisa dan perhitungan kemungkinan kegagalan Qorobability offailure-POP) dan tingkat keparahan dari suatu kegagalan (consequence of failure-COD dari suatu kejadian terhadap 6 buah tangki timbnm di Plant SBN dengan mengunakan prinsip standar API 581 qualitative risk assessment berupa label checklist. Berdasarkan hasil perhitungan factor proability of failure (POP) dan consequence of failure (COF) disimpulkan bahwa tingkat rcsiko 6 buah tangki timbun yang ada di Plant SBN adalah sebagai berikut: tangki condensate 235-T-101A dan 235-T-101B mempunyai tingkat nesiko "tinggi"; tangki condensate 235-T-201 mempunyai tingkat resiko "medium-tinggi"; tangki diesel fuel 247-T-101, produce water 258-T-101 dan 258-T-201 mempunyai tingkat reslko "rendah". Damage Factor dan Inspection Factor mempakan falctor kontribusi dominan dalam perhimngan kemunglcinan kegagalan sedangkan Chemical Factor, Quantity Factor, Auto Ignition Factor, Pressure Factor, dan Credit Factor (S'cy@ty Protection) merupakan faktor kontribusi dominan dalam perhitungan konsekwensi kegagalan pada ke-6 buah tangki tezsebut selama proses peuilaian resiko.

.....Gas refinery process at SBN Plant is a plant which contains hazardous material/fluid during its process. Natural gas composition as hydrocarbon contains impurities such as HQO, CO2, H23 and other particles, which may cause equipment damage (including corrosion, thinning or cracking). A product from gas refinery is gas, condensate and produce water which they have difference hazards characteristic. However if there is gas or condensate leaking or exposed to employees or environment, it can lead a worst event. This research is to perform risk assessment using descriptive analysis approach by calculating and analyzing the probability of failure (POF) and consequence of failure (COF) at 6 (six) storage tanks at SBN Plant by using API 581 Standard as qualitative risk assessment approach with checklist table. Results suggested that probability of failure (POF) and consequence of failure (COF) factors are as follows: condensate tanks 235-T-101A and 235-T-101B have risk ranking "high"; condensate tank 235-T-201 has risk ranking "medium-high" (significant risk); diesel fuel tank 247-T-101, produce water tank 258-T-101 and 258-T-201 have risk ranking "low". Damage Factor and Inspection Factor are dominant contributing factors in probability of failure calculation and Chemical Factor, Quantity Factor, Auto Ignition Factor, Pressure Factor, Credit Factor (Safety Protection) are dominant contributing factors for consequences of failure calculation for 6

(six) storage tanks during risk assessment process.