Implementasi Metode Hazard Operability Study (HAZOP) Untuk Keamanan Operasi Perengkahan Minyak Jelantah Di Unit Pilot Plant Hydroprocessing = Implementation of the Hazard Operability Study (HazOp) Method for the Safety of the Cracking Operation of Used Cooking Oil In Hydroprocessing Pilot Plant Unit

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Abstrak

Laporan kerja pratik keinsinyuran ini dibuat untuk memenuhi sebagian syarat memperoleh gelar Insinyur Profesi pada Programm Studi Profesi Insinyur Fakultas Teknik Universitas Indonesia. Kerja praktik dilakukan di Laboratorium Pilot Plant Innovation Pertamina selama lebih kurang 2 tahun. Implementasi Metode Hazard Operability Study (HazOp) pada Operasi Pilot Plant Hydroprocessing Pertamina bertujuan untuk mengidentifikasi dan mengevaluasi masalah-masalah yang mewakili resiko-resiko perorangan atau peralatan atau mencegah operasi yang efisien. Sehingga tercipta suatu kondisi aman pada OPERASI PERENGKAHAN minyak Jelantah. Selama ini tidak pernah terjadi kecelakaan di Pilot Plant Innovation Pertamina, karena Tim Laboratory Services mempunyai komitmen untuk menerapkan Metode HazOp dan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) secara rutin dan berkelanjutan. Kondisi operasi yang aman pada Operasi Perengkahan Minyak Jelantah di Unit Hydroprocessing Pilot Plant Inovasi Pertamina dipengaruhi oleh faktor internal dan eksternal. Faktor internal adalah kondisi fisik instrumen pada Hydroprocessing Units: Apakah baik atau rusak ? Sedangkan faktor eksternal adalah operator yang tidak teliti dan disiplin dalam memantuan kondisi fisik Unit Hydrprocessing, dan juga tidak mengimplementasikan prosedur HazOp dengan baik dan benar, dapat mengakibatkan kecelakaan.Hydroprocessing Pilot Plant Inovasi Pertamina termasuk dalam kelas hydrotreating berdasarkan prinsip dan mekanismenya. Hasil uji coba Perengkahan Minyak Jelantah dari pabrik percontohan (Pilot Plant Innovation Pertamina) berupa produk energi baru, yang akan dikembangkan lebih lanjut oleh Kilang-Kilang Minyak Pertamina yang ada di Indonesia untuk memenuhi kebutuhan energi masyarakat. Rekomendasi yang diberikan untuk mengurangi resiko kecelakaan kerja, antara lain: Operator wajib menggunakan APD (Alat Pelindung Diri) saat bekerja, dan harus berhati-hati saat bekerja di area Unit Pilot Plant Hydroprocessing, dan operator harus dapat menyesuaikan diri pada lingkungan kerja.
.....This engineering practical work report is made to fulfill some of the requirements for obtaining the Professional Engineer degree at the Professional Engineer Study Program, Faculty of Engineering of the University of Indonesia. Practical work was carried out at the Pertamina Innovation Pilot Plant Laboratory for approximately 2 years. The implementation of the Hazard Operability Study (HazOp) Method in Pertamina's Hydroprocessing Pilot Plant Operations aims to identify and discuss problems that represent individual or equipment risks or prevent efficient operation. So as to create a safe condition in the process of cracking used cooking oil. So far, there has never been an accident at Pertamina's Innovation Pilot Plant, because the Laboratory Services Team is committed to implementing the HazOp Method and the Occupational Safety and Health Management System (SMK3) on a regular and sustainable basis. The safe operating conditions in the Used Cooking Oil Cracking Process at the Hydroprocessing Unit of Pertamina's Innovation Pilot Plant are influenced by internal and external factors. The internal factor is the physical

condition of the instrument at the Hydroprocessing Units: Is it good or damaged? Meanwhile, external factors are operators who are not careful and disciplined in monitoring the physical condition of the Hydrprocessing Unit, and also do not implement the HazOp procedure properly and correctly, which can result in accidents. Pertamina's Innovation Hydroprocessing Pilot Plant is included in the hydrotreating class based on its principles and mechanisms. The results of the Cracking of Used Cooking Oil from the pilot plant (Pertamina's Pilot Plant Innovation) are in the form of new energy products, which will be further developed by Pertamina Oil Refineries in Indonesia to meet people's energy needs. The recommendations given to reduce the risk of work accidents include: Operators must use PPE (Personal Protective Equipment) while working, and must be careful when working in the area of Hydroprocessing Pilot Plant Unit, and operators must be able to adapt to the work environment.