

Studi analisis dan perancangan koordinasi proteksi rele arus lebih untuk peningkatan operasional sistem tenaga listrik: studi kasus sistem kelistrikan anjungan lepas pantai = Study of analysis and design of coordination of overcurrent relay protection for improved power system operations: case study of electrical system offshore platform

Syarif Hidayatullah, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=9999920526799&lokasi=lokal>

Abstrak

Koordinasi Proteksi rele arus lebih menjadi bagian dari sistem proteksi tenaga listrik di pengeboran minyak lepas pantai. Penurunan produksi sumur menjadikan rekonfigurasi jaringan akan dilakukan sehingga studi koordinasi proteksi diperlukan agar mencapai keamanan dan keandalan operasional yang diinginkan. Studi koordinasi proteksi dilakukan dengan perangkat lunak Electric Transient and Analysis Program (ETAP). Studi ini membahas permasalahan koordinasi proteksi sistem eksisting pada sisi transmisi tenaga listrik akibat selektivitas proteksi yang kurang baik berdasarkan diagram star. Metodologi dalam perancangan ulang dilakukan dengan mengacu pada standar yang disesuaikan dengan sistem eksisting (ANSI) melalui perhitungan dengan luaran kualitatif. Perancangan ulang koordinasi sistem proteksi telah dilakukan sehingga mendapatkan koordinasi antar rele sesuai dengan tujuan awal (diatas 300ms antar rele).

.....Overcurrent relay protection coordination is part of the electric power protection system in offshore oil drilling. The decrease in well production means that network reconfiguration will be carried out so that a protection coordination study is required in order to achieve the desired operational security and reliability. Protection coordination studies were carried out using the Electric Transient and Analysis Program (ETAP) software. This study discusses the problem of coordinating the protection of the existing system on the power transmission side due to deficient protection selectivity based on the star diagram. The methodology for redesigning is carried out by referring to standards adapted to the existing system (ANSI) through calculations with qualitative outcomes. Redesigning the coordination of the protection system has been carried out to obtain coordination between relays in accordance with the initial goal (above 300ms between relays).