CONTINGENCY ANALYSIS (N-1) 20KV SYSTEM PT. PERTAMINA (PERSERO) REFINERY UNIT -VI BALONGAN INDRAMAYU - JAWA BARAT

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ABSTRAC

The 20 kV electrical system PT. Pertamina (Persero) Refinery Unit VI Balongan consumes a large amount of electrical energy, namely the total installed power of 5 × 27.5 MVA. Improving the quality of the electric power system determines the production results of refinery processing so that the electrical system must comply with the contingency standard (N-1) applied to power plants, namely the release of one generator due to a disturbance. Contingency research (N-1) applied to power plants by modeling the Single Line Diagram and Newton-Raphson Adaptive power flow simulation using ETAP (Electric Transient and Analysis Program) 12.6.0 software by selecting the special ETAP load flow menu. The assessment simulation (N-1) states that the 20 kV PT. Pertamina (Persero) Refinery Unit VI Balongan continues to operate normally even though there is an outage at the plant with code 51-G-101C, 51-G-101D and 51-G-101E, but the opposite occurs at the generator with code 51-G-101A. If a disconnection occurs, it will result in a voltage drop and load drop on bus 01A while bus 01B is overloaded and over voltage, as well as the 51-G-101B generator which is over-voltage and overloaded on all bus 01A and bus 01B.

Keywords: Contingency (N-1), Improvement, Quality.