

ABSTRACT

Reliability Analysis of Distribution System on Sabagi Feeder at PT PLN(Persero) South Banten Area with Failure mode and effect analisys (FMEA) Method and Section Technique Method

The continuity of 20 kV electricity distribution system to PLN's cutomers, especially PLN's customers at South Banten Area was quite influence of system reliability index. Reliability level of electricity's distribution system could be measured from how much fault were happened and how long the duration of the fault for recovery to the system and continuity of electricity distribution also quite influence with every equipment of component or element of distribution system.

In this research, it has been performed analysis study of reliability level of 20 kV distribution at PLN South Banten Area specific on Sabagi feeder with Failure mode and effect analisys (FMEA) Method and Section Technique Method to identify and evaluate reliability level of the feeder so the result could be compared with PLN's standard.

The result of the analysis study with FMEA Method showed the value of SAIFI = 2.4054 fault/year, SAIDI's Value = 7.2426 hours/year, and CAIDI's value = 3.011 hours/year. Meanwhile the result of analysis study with Section Technique method showed the value of SAIFI = 2.4226 fault/year, SAIDI's value = 7.3219 hours/year, and CAIDI's value = 3.022 hours/year. The difference value of reliability index SAIFI, SAIDI, and CAIDI on Sabagi Feeder were not significant between result of both methods, FMEA and Section Technique. Based on the results, the reliability level of Sabagi Feeder was still reliable and meet SPLN 68, which were SAIFI's value was 3.2 fault/year and SAIDI's value was 21 hours/year.

Keywords : FMEA, Section Technique, Index, Reliability, Distribution System.