EVALUATION OF PROTECTION COORDINATION AT PABRIK III PT. PETROKIMIA GRESIK DUE TO ADDITIONAL CURRENT LIMITER

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Abstract

PT Petrokimia Gresik has three factories, which are integrated. Pabrik III was supplied by using a Steam Turbine Generator 1x11.5 MW, 1x8.5 MW and connected with the integration of 20 kV ring using transformer 20MVA. Short circuit fault current which flow in the main switchgear HVS 65 exceed its bracing capabilities to hold the maximum fault current (Isc asym = 40kA, Isc peak = 62,5 kA). The limiting current by a fuse (Current Limiter) is used to limit the short circuit current interruption which flow on the switchgear HVS 65. Current limiter will decide the momentary peak short circuit interruption of 13 kA contributions from Ring 20 kV and 10 kA contribution from power generation TG66 8,5 MW. Before installation, short circuit current interruption are 12,499 kA contributions from power generation TG65 11,5MW–TG66 8,5MW and 25,223kA contributions from ring 20kV–power generation TG65 11,5MW–TG66 8,5 MW. Its installation change the short circuit current interruption to ±7,187 kA. Its result can change the protection coordination. Evaluation of the coordination was conducted to determine whether existing coordination arrangements were in accordance with the terms of the security. Its results will be shown by time-current characteristic curve (TCC).

Keywords : current limiter, short circuit current, coordination protection, time-current characteristic curve
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