


Case Study

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| Study Area: | Protection Devices and Co-ordination Study | |
| Job: | Design, select and recommend proper protection devices for fabrication shop and co-ordination study | |
| Date: | Q4-2025 |  |
| Location: | Kharsundi Industrial Area, Near Khalapur, Raigad, Maharashtra, India | |
| Project Background: | <p>M/S Gurukrupa Engineering was setting up fabrication shop at Kharsundi Industrial Area near Khalapur, India.</p> <p>Total load and required distribution were provided. The scope of this study was to carry out a short circuit current study and Relay co-ordination. Main distribution from electricity board to M/S Gurukrupa Engineering and MV panel at fabrication shop was included in scope. Report to be submitted to Maharashtra State Electricity Board for approval and release power.</p> | |
| Engineering Challenge: | <ol style="list-style-type: none"> 1. Follow rules and regulation of Maharashtra State Electricity Board for Distribution, routing and installation. 2. Load characteristics of equipment connected to MV panel | |
| Scope of Work: | <ul style="list-style-type: none"> • Sizing and selection of cable from Maharashtra State Electricity Board distribution point. • Sizing and selection of new breaker for new power supply tapping • Sizing and selection of transformer for new power supply • Evaluation of short circuit current and suggesting protection relay • Distribution from transformer to MV panel • Relay co-ordination study | |

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| Key Findings: | <ul style="list-style-type: none">• Power to M/S Gurukrupa was feed from ring network from MSEB at 11 KV• Separate isolator was assigned for M/S Gurukrupa with protection circuit.• Recommended for numeric relay for easy change of setting considering upcoming requirement in future.• Short circuit current calculation as per IEC 60909 and it's analysis.• Relay co-ordination Study and recommendation of settings. |
| Engineering Recommendations: | <ol style="list-style-type: none">1. Protection relay Based on the standard and practices adopted by MSEB protections recommended as per load characteristics.2. Short circuit Current Based on the load on network and transformer data short circuit current was calculated3. Relay co-ordination study Based on TCC curves recommended protective Relay with numeric setting. |
| Final Outcomes: | <ol style="list-style-type: none">1. Report submitted for MSEB along with revised SLD.2. Protection scheme was approved by MSEB.3. Power released later after completion of construction activities. |
| Key Lessons & Best Practices: | <ul style="list-style-type: none">• Perform document review properly with inputs from client/ present operating user. |