ELG4125 Case Study: Submission 4 on Protection Systems

Draw a layout for your distribution system including one primary distribution substation and three secondary distribution substations (Residential, Commercial, and industrial).

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Outline the required protection equipment

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| --- | --- | --- | --- |
| Instrument Transformers |  |  |  |
| Relays |  |  |  |
| Circuit Breakers |  |  |  |
| Lightning Protection |  |  |  |
| Grounding |  |  |  |

Protection Equipment Ratings

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| --- | --- |
| Primary Transformers | Size CT for both sides of the transformer using Table 10.2 and Example 10.10 |
| Secondary Transformer | Size CT for both sides of the transformer using Table 10.2 and Example 10.10 |

Circuit Breaker Sizing

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| Use Table A.2. |

Summary of Protection System

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| --- | --- | --- |
| Device | Protection Circuit | Equipment Rating |
| Generators |  |  |
| Generating Transformers |  |  |
| Busbars |  |  |
| Transmission Line |  |  |
| Transmission Transformer |  |  |

Primary Distribution Topologies

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|  |  |  |

Secondary Distribution Topologies

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How a utility maintains “power quality”?