

3.3.1 Zone 1 Setting	11
3.3.2 Zone 2 Setting	11
3.3.3 Zone 3 Setting	11
3.4 Effect of Load Current	11
3.5 Effect of Arc Resistance	12
3.6 Distance Protection Schemes	13
3.6.1 Permissive Under-reach Scheme	13
 Chapter 4: Relay Technology	 15
4.1 Introduction	15
4.1.1 Electromechanical Relays	15
4.1.2 Static Relays	15
4.1.3 Digital Relays	16
4.1.4 Numerical Relays	16
4.2 Comparison between Electrical Power Systems	17
Protective Relays	
4.3 Distance Relays	17
4.3.1 Types of Distance Relays	18
4.3.2 Distance Relay Characteristics	20
 Chapter 5: Numerical Relay REL511*2.3	 33
5.1 Introduction	33
5.2 Structure of REL511*2.3	34
5.3 REL511*2.3 Algorithm	35
5.4.1 Discrete Fourier Transform	35
5.4 REL 511*2.3 Installation	36
5.4.1 DC Supply	36
5.4.2 Current Transformers (CTs) and Voltage	36
Transformers (VTs)	
5.4.3 PC – relay Ronnection	37
5.4.4 Human Machine Interface	37
5.5 Relay Measuring Principles	38
5.5.1 Switch-onto-fault Function (SOFT)	40
5.5.2 Dead-Line Detection (DLD)	40