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## LIST OF SYMBOLS AND ABBREVIATIONS

### Symbols

$\Delta V_k$	-	Change of $k^{\text{th}}$ bus voltage
$FDL_r$	-	Actual KVA loading of the $r^{\text{th}}$ Feeder
$FDL_{r \text{ max}}$	-	Capacity of the $r^{\text{th}}$ Feeder
$FDRLDG_r$	-	% VA loading of the $r^{\text{th}}$ Feeder
$fno$	-	Total number of feeders
$I_f$	-	Fault Current in Amperes
$I_{FDRMAX k}$	-	Maximum Current Rating of the $k^{\text{th}}$ Feeder
$I_{load k}$	-	Total Load Current in the $k^{\text{th}}$ Feeder
$I_s$	-	Secondary Current of the Current Transformer in Amperes
$I_{TFRR}$	-	Rated Current of the Transformer
LPOR	-	Load Priority Order Ratio
$LPRO_n$	-	Priority order of the $n^{\text{th}}$ Load
nbch	-	Total number of branches
nbus	-	Total number of buses
nload	-	Total number of connected loads in the pre/post fault power distribution network
$P_{a(i+1)}$	-	Total Real power injection in the phase 'a' at $i^{\text{th}}$ node
$P_{b(i+1)}$	-	Total Real power injection in the phase 'b' at $i^{\text{th}}$ node
$P_c$	-	Probability of Crossover
$P_{c(i+1)}$	-	Total Real power injection in the phase 'c' at $i^{\text{th}}$ node
$PD_{a(i)}$	-	Real Power demand in the phase 'a' at $i^{\text{th}}$ node
$PD_{b(i)}$	-	Real Power demand in the phase 'b' at $i^{\text{th}}$ node
$PD_{c(i)}$	-	Real Power demand in the phase 'c' at $i^{\text{th}}$ node
$PLOSS_{a(j)}$	-	Real Power loss of phase 'a' at the branch 'j'
$PLOSS_{b(j)}$	-	Real Power loss of phase 'b' at the branch 'j'

$PLOSS_{c(j)}$	-	Real Power loss of phase 'c' at the branch 'j'
$P_m$	-	Mutation Probability
$Q_{a(i+1)}$	-	Total Reactive power injection in the phase 'a' at $i^{th}$ node
$Q_{b(i+1)}$	-	Total Reactive power injection in the phase 'b' at $i^{th}$ node
$Q_{c(i+1)}$	-	Total Reactive power injection in the phase 'c' at $i^{th}$ node
$QD_{a(i)}$	-	Reactive Power demand in the phase 'a' at $i^{th}$ node
$QD_{b(i)}$	-	Reactive Power demand in the phase 'b' at $i^{th}$ node
$QD_{c(i)}$	-	Reactive Power demand in the phase 'c' at $i^{th}$ node
$QLOSS_{a(j)}$	-	Reactive Power loss of phase 'a' at the branch 'j'
$QLOSS_{b(j)}$	-	Reactive Power loss of phase 'b' at the branch 'j'
$QLOSS_{c(j)}$	-	Reactive Power loss of phase 'c' at the branch 'j'
$Q_{sh}$	-	Shunt Capacitor Bank Rating in MVAR
$R_{a(j)}$	-	Resistance of phase 'a' at $j^{th}$ node
$R_{b(j)}$	-	Resistance of phase 'b' at $j^{th}$ node
$R_{c(j)}$	-	Resistance of phase 'c' at $j^{th}$ node
$SD_{a(i)}$	-	Complex Power of the Load in phase 'a' at $i^{th}$ node
$SD_{b(i)}$	-	Complex Power of the Load in phase 'b' at $i^{th}$ node
$SD_{c(i)}$	-	Complex Power of the Load in phase 'c' at $i^{th}$ node
$SWB_j$	-	Status of the switch 'j' before reconfiguration of the Power Distribution Network
$SW_j$	-	Status of the switch 'j' after reconfiguration of the Power Distribution Network
$SW_{max}$	-	Sum of total number of sectionalizing and tie switches
$TFLDG_r$	-	% VA loading of the $r^{th}$ Transformer
$TFL_r$	-	Actual KVA loading of the $r^{th}$ Transformer
$TFL_{r\ max}$	-	Capacity of the $r^{th}$ Transformer
$ V_{a(i)} $	-	Voltage magnitude of phase 'a' at $i^{th}$ node

$ V_{b(i)} $	-	Voltage magnitude of phase 'b' at $i^{\text{th}}$ node
$ V_{c(i)} $	-	Voltage magnitude of phase 'c' at $i^{\text{th}}$ node
$V_k$	-	Voltage at the $k^{\text{th}}$ bus
$V_{\max}$	-	Maximum allowable bus voltage limit in per unit
$V_{\min}$	-	Minimum allowable bus voltage limit in per unit
$X_{a(j)}$	-	Reactance of phase 'a' at $j^{\text{th}}$ node
$X_{b(j)}$	-	Reactance of phase 'b' at $j^{\text{th}}$ node
$X_{c(j)}$	-	Reactance of phase 'c' at $j^{\text{th}}$ node
$Z_{a(j)}$	-	Impedence of phase 'a' at the $j^{\text{th}}$ branch
$Z_{b(j)}$	-	Impedence of phase 'b' at the $j^{\text{th}}$ branch
$Z_{c(j)}$	-	Impedence of phase 'c' at the $j^{\text{th}}$ branch
$\delta_{a(i)}$	-	Voltage angle of phase 'a' at $i^{\text{th}}$ node
$\delta_{b(i)}$	-	Voltage angle of phase 'b' at $i^{\text{th}}$ node
$\delta_{c(i)}$	-	Voltage angle of phase 'c' at $i^{\text{th}}$ node

### Abbreviations

PPLOAD	-	Actual Total Real Power Demand
ET	-	Expected Time
LOSTPLOAD	-	Loss of Real Power Demand due to change in configuration of the Power Distribution Network
MT	-	Mostly Likely Time
NSGA	-	Non-dominated Sorting Genetic Algorithm
SWOP	-	Number of switching operations
OT	-	Optimistic Time
PT	-	Pessimistic Time
TFNO	-	Total number of Transformers
TPLOAD	-	Total Real Power Demand of the pre-fault Power Distribution Network
PLL	-	Total Real Power Loss
TRT	-	Total Restoration Time