

NOTATION AND TERMINOLOGY

P	:	Active power
P_i	:	Active Power at the i^{th} bus
M_{ip}	:	Additional load in the Failure Generation i
Y_{ik}	:	Admittance between the i^{th} and k^{th} buses
Y	:	Bus Admittance Matrix
ΔQ	:	Change in Reactive Power
ΔP	:	Change in Real Power
G_{ik}	:	Conductance between the i^{th} and k^{th} buses
P_e	:	Electrical output Power
P_{Gj}	:	Generation of the j^{th} unit.
H_i	:	Inertia constant of the i^{th} machine
M_o	:	Initial Component Failures
P_{Di}	:	Island Demand
I_{px}	:	Island Participation Index
J	:	Jacobian Matrix
P_{LA}	:	Magnitude of disturbance
$P_{ik, \max}$:	Maximum Power flow from the k^{th} bus to i^{th} bus
Q_{\max}	:	Maximum Reactive Power Limit
$\bar{\theta}$:	Mean of the Initial Distribution Failures
λ	:	Mean propagation of failures
P_m	:	Mechanical output Power
Q_{\min}	:	Minimum Reactive Power Limit
f_o	:	Normal Frequency
q	:	Number of cohesive load groups
r	:	Number of Component Failures
n	:	Number of Failed Components
p	:	Number of Poles
Q	:	Reactive Power

Q_i	:	Reactive Power at the i^{th} bus
δ	:	Rotor angle
n_m	:	Rotor Speed
$P_{D\text{spec}}$:	Specific System Demand
B_{ik}	:	Susceptance between the i^{th} and k^{th} buses
B	:	Susceptance Matrix
B'	:	Simplified Jacobian Matrix omitting Shunt reactive elements that affect MVAR flows
B''	:	Simplified Jacobian Matrix omitting phase shifter
P_{sik}	:	Synchronizing Power System coefficient between the generator i and the disturbance node k
P_c	:	Threshold Power flow
t	:	Time
ε	:	Tolerance value
S	:	Total number of Component Failures
L_{ik}	:	Transmission Line from the k^{th} bus to i^{th} bus
θ_i	:	Voltage angle at the i^{th} bus
V_i	:	Voltage magnitude at the i^{th} bus
V_k	:	Voltage magnitude at the k^{th} bus

ABBREVIATION

CEA	:	Central Electricity Authority
ER	:	Eastern Region
GW	:	Giga Watt
HVDC	:	High Voltage Direct Current
IEGC	:	Indian Electricity Grid Code
IT	:	Information Technology
LTC	:	Load Tap Changer
NER	:	North Eastern Region
NR	:	Northern Region
PSS	:	Power System Stabilizer
PDF	:	Probability Distribution Function
RAS	:	Remedial Action Scheme
SR	:	Southern Region
SPS	:	Special Protection Scheme
SVC	:	Static Var Compensator
SCADA	:	Supervisory Control And Data Acquisition
UFLS	:	Under Frequency Load Shedding
UVLS	:	Under Voltage Load Shedding
WR	:	Western Region
WSCC	:	Western Society Coordination Council
GRS	:	Generation Rejection Scheme
PGCIL	:	Power Grid Corporation of India Limited
MU	:	Million Units
DC	:	Double circuit