

TABLE 18.1 References on Generator Protection Topics

Problem Location	Type of Problem	Reference Number					
		[1]	[2]	[3]	[4]	[5]	[6]
Stator winding	Phase fault	T	T	T	T	T	T
	Ground fault	T	T	T	T	T	T
	Turn-to-turn fault	N	N	D	D	—	T
	Open circuit	D	N	—	—	—	—
	Overheating	A	U	A	A	D	A
	Overvoltage	R	T	R	R	R	T
	Unbalanced current	T	T	T	T	R	T
	Generator fault backup	—	—	—	T	—	T
	External fault backup	T	T	—	—	T	T
	Generator VT fuse blown	D	T	—	—	—	—
	Single phasing	D	—	—	—	—	—
Field winding	Shorted winding	N	D	D	D	—	I
	Grounded winding	D	T	T	T	D	T
	Open field winding	D	—	D	D	—	—
	Overheating	D	—	—	A	—	A
Other systems	Overspeed	—	D, O	T, O	T, O	D, O	T
	Vibration	D	T, A	—	D	—	T
	Motoring	D	D	D	D	D	T
	Bearing overheating	D	U, A	U, A	D	—	—
	Overheated coolant	D	D	—	D	—	—
	Fire	D	—	—	—	—	—
	Startup protection	—	—	—	—	D	T
	Loss of excitation	T	T	T	D	D	—
	Loss of synchronism	D	O	O	D	—	T
	Voltage regulator failure	—	—	D	—	—	T
Plant auxiliaries	—	—	D	—	—	T	

Note: T = Generator trip recommended

A = Alarm only recommended

D = Described

R = Protection recommended in some cases

N = Not usually provided

U = Needed for unattended stations

O = Provided by other protective systems