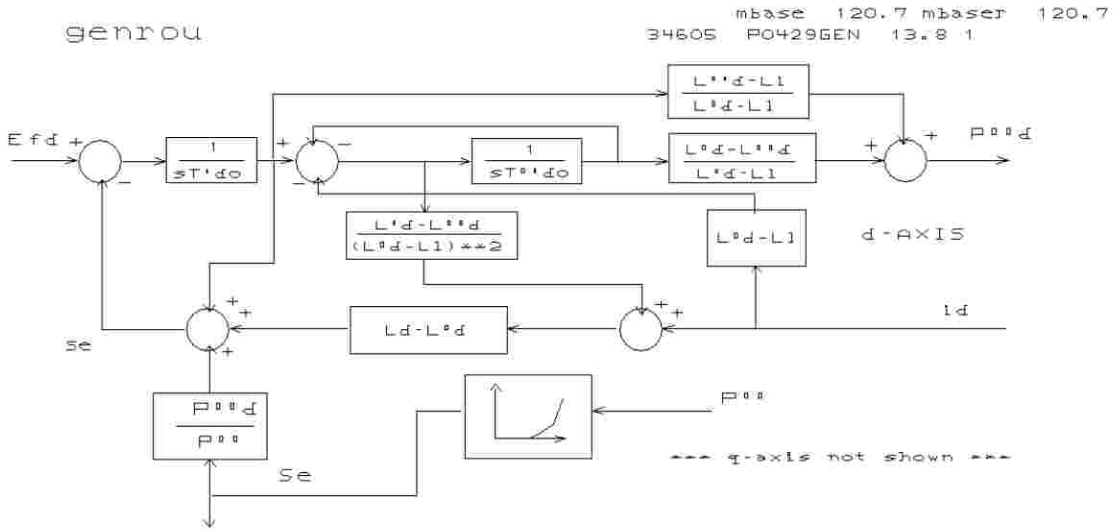
Appendix E

Generator Machine Dynamic Data

Machine Data: Model: GENROU



ld	1.6520	lpq	0.2920	tpdo	10.6000	s1	0.1200
lpd	0.2119	lppq	0.1582	tppdo	0.0400	s12	0.6600
lppd	0.1582	ll	0.1610	tpqo	3.8000	h	2.1300
lq	2.1290	ra	0.0026	tppqo	0.0420	d	0.0000

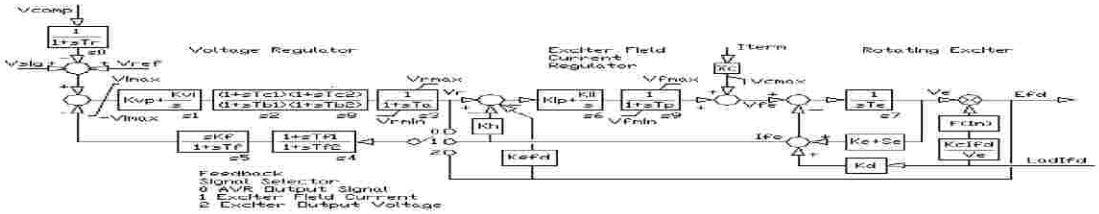
Variable	Description	Value
Tdop	D-axis transient rotor time constant, set	10.6
Tppdo	D-axis sub-transient rotor time constant, sec	0.04
Tpqo	Q-axis transient rotor time constant, sec	3.80
Tppqo	Q-axis sub-transient rotor time constant, sec	0.042
H	Inertia constant, sec	2.13
D	Damping factor, pu	0.00
Ld	D-axis synchronous reactance, pu	1.652
Lq	Q-axis synchronous reactance, pu	2.129
Lpd	D-axis transient synchronous reactance, pu	0.2119
Lpq	Q-axis transient synchronous reactance, pu	0.292
Lppd	D-axis subtransient synchronous reactance, pu	0.1582
Ll	Stator leakage reactance, pu	0.161
s1	Saturation factor at 1 pu flux	0.12
s12	Saturation factor at 1.2 pu flux	0.66
Ra	Stator resistance, pu	0.0026
Rcomp	Compounding resistance voltage control, pu	0.00
Xcomp	Compounding reactance voltage control, pu	0.00

Excitation Data: Model: REXS

mbase 120.7 mbaser 120

34605 P0429GEN 13.8 1

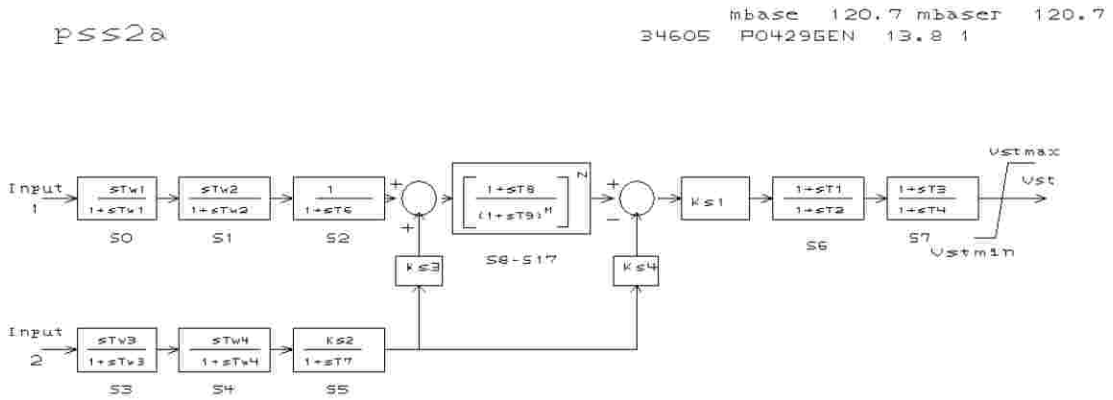
tr	0.0000	ta	0.0167	tc2	0.0000	tf	1.0000
kvp	35.5120	tb1	0.0000	vrmax	13.2800	tf1	0.0000
kvi	35.5120	tc1	0.0000	vrmin	0.0000	tf2	0.0000
vimax	13.2800	tb2	0.0000	kf	0.0000	fbf	1.0000



Variable	Description	Value
Tr	Voltage transducer time constant, sec	0
Kvp	Voltage regulator proportional gain	35.512
Kvi	Voltage regulator integral gain	35.512
Vimax	Voltage regulator input limit, p.u.	13.28
Ta	Voltage regulator time constant, sec	0.01667
Tb1	Lag time constant, sec	0
Tc1	Lead time constant, sec	0
Tb2	Lag time constant, sec	0
Tc2	Lead time constant, sec	0
Vrmax	Maximum controller output, p.u.	13.28
Vrmin	Minimum controller output, p.u.	0
Kf	Rate feedback gain	0
Tf	Rate feedback time constant, sec	1.0
Tf1	Feedback lead time constant, sec	0
Tf2	Feedback lag time constant, sec	0
Fbf	Rate feedback signal flag	1
Kip	Field current regulator proportional gain	19.42
Kii	Field current regulator integral gain	1.832
Tp	Field current bridge time constant, sec	0.01667
Vfmax	Maximum exciter field current, p.u.	10.0
Vfmin	Minimum exciter field current, p.u.	-10.0
Kh	Field voltage controller feedback gain	1.49588

Ke	Exciter field proportional constant	1.0
Te	Exciter field time constant, sec	1.2
Kc	Rectifier regulation factor, p.u.	.382
Kd	Exciter regulation factor, p.u.	1.657
E1	Exciter flux at knee of curve, p.u.	6.37
Se1	Saturation factor at knee	0.066
E2	Maximum exciter, p.u.	7.84
Se2	Saturation factor at max flux	0.29
Rcomp	Not used	0
Xcomp	Not used	0
Nvphz	Pickup speed of v/Hz limiter, p.u	0
Kvphz	V/Hz limiter gain	0
Flimf	Limit type flag	0
Xc	Exciter compounding reactance, p.u.	0.152
Vcmax	Maximum compounding voltage, p.u.	0.20
Kefd	Field voltage feedback gain	0

PSS Data: Model PSS2a

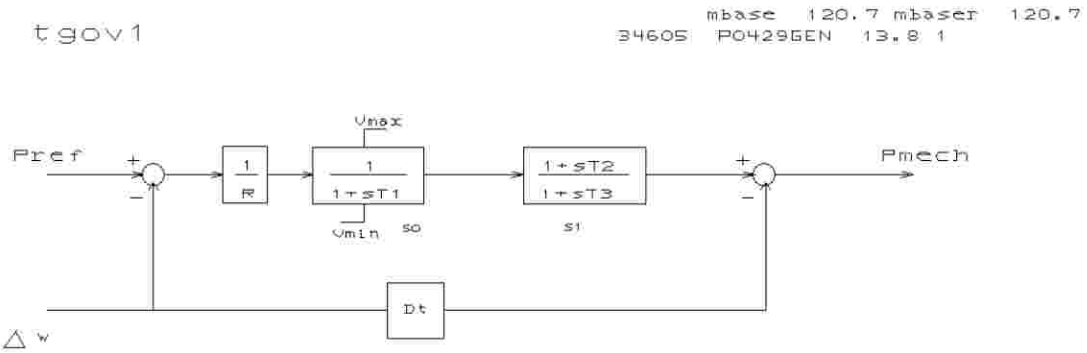


j1	1.0000	tw1	2.0000	t6	0.0000	ks4	1.0000
k1	0.0000	tw2	2.0000	t7	2.0000	t8	0.5000
j2	3.0000	tw3	2.0000	ks2	0.2370	t9	0.1000
k2	0.0000	tw4	0.0000	ks3	1.0000	n	1.0000

Variable	Description	Value
j1	Input signal #1 code	1
k1	Input signal #1 remote bus number	33857
j2	Input signal #2 code	3
k2	Input signal #2 remote bus number	33857
tw1	First washout on signal #1, sec	2.00
tw2	First washout on signal #1, sec	2.00
tw3	First washout on signal #2, sec	2.00
tw4	First washout on signal #2, sec	0.00
t6	Time constant on signal #1, sec	0.00
t7	Time constant on signal #2, sec	2.00
ks2	Gain signal #2	0.237
ks3	Gain signal #2	1.00
ks4	Gain signal #2	1.00
t8	Lead of ramp tracking filter	0.50
t9	Lag of ramp tracking filter	0.10
N	Order of ramp tracking filter	1.0
M	Order of ramp tracking filter	5.0
ks1	Stabilizer gain	1.0
t1	Lead/lag time constants, sec	0.15
t2	Lead/lag time constants, sec	0.03

t3	Lead/lag time constants, sec	0.15
t4	Lead/lag time constants, sec	0.03
vstmax	Stabilizer output max limit, p.u.	0.10
vstmin	Stabilizer output min limit, p.u.	-0.10

Governor Data: TGOV1



Variable	Description	Value
R	Permanent droop, p.u.	0.041667
T1	Steam bowl time constant, sec	25.2
Vmax	Maximum valve position, p.u. of mwcap	1.2
Vmin	Minimum valve position, p.u. of mwcap	0.8
T2	Numerator time constant of T2, T3 block, sec	0.01667
T3	Reheater time constant, sec	0.01667
Dt	Turbine damping coefficient, p.u.	0