Estimated Generator Data
IPS 503648 – 1x 109FB SS

Rating	
Project Name	SNET Montceau les Mines Lucy
Generator type	450H
Electrical Design Number	503648G1
KVA	512000 kVA
Power Factor Leading	0.95
Power Factor Lagging	0.85
KW	435200 kW
RPM	3000 RPM
Rated Voltage	18500 Volts
Line Current	15979 Amps
Cooling System (OV / TEWAC / H2)	TEWAC / Hydrogen
SCR	0.50
Site Altitude	1542 Ft
Rated H2 Temp	40 C
Exciter (Design Amps / KW / Voltage)	2820 A / 2115 kW / 750 V
Exciter (IGNL / IFNL / IFFL)	805 / 870 / 2609
Rating (i.e., ANSI / IEC)	IEC
Temperature Class (i.e., B)	B
Coolant (Type / FF / Flow)	33% Ethylene Glycol / 0.0010 / 2500 GPM
Guaranteed I2 SQ.T (s)	7
TIF (L-L / L-N / Residual)	0. / 0. / 0.
Field Resistance @ 25 C	0.1716
Armature Resistance @ 25 C	0.000664
No-Load Saturation factor (S1.0 / S1.2)	0.0337 / 0.1951
Losses	
Fan & Wind	701
Core	404
Load	800
I2R Arm	646
I2R Field	1483
Misc	100
Exciter	82
Bearings	542
Total	4757
Efficiency	98.92%
Direct Axis Reactances (PU, Rounded)	
Synchronous (XD)	2.10
Transient Sat (X'DV)	0.275
Transient Unsat (X'DI)	0.310
Subtransient Sat (X"DV)	0.200
Subtransient Unsat (X"DI)	0.245
Negative Sequence Sat (X2V)	0.198
Negative Sequence Unsat (X2I)	0.247
Zero Sequence Sat (X0V)	0.134
Zero Sequence Unsat (X0I)	0.134
Armature Leakage Sat (XLV)	0.169

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Armature Leakage Unsat (XLI)	0.190
Quaturature Axis Reactances (PU, Rounded)	
Synchronous (XQ)	2.02
Transient (X'Q)	0.50
Subtransient Sat (X"QV)	0.20
Subtransient Unsat (X"QI)	0.24
Hipots	
Armature / Field (Volts)	38000 / 5240
Resistances (Per Unit)	
Armature (DC) (RA)	0.001281
Positive Sequence (R1)	0.0028
Negative Sequence (R2)	0.0101
Zero Sequence (R0)	0.0047
Time Constants (Seconds)	
Direct:	
Transient, Open Circuit (T'DO)	6.805
Transient, 3 Phase (T'D3)	0.793
Transient, Line – Line (T'D2)	1.392
Transient, Line – Neutral (T'D1)	1.690
Subtransient (T''DO)	0.042
Subtransient (T''D)	0.031
Armature (TA2 = TA3)	0.577
Armature (TA1)	0.440
Quadrature:	
Transient (T'Q)	0.150
Transient, Open Circuit (T'Q0)	0.614
Subtransient (T''Q)	0.031
Subtransient (T''Q0)	0.077