



SriVaru Green Energy
Service Private Limited

Hoto Inspection Report – V47

Report No	HIR /2024-25/SVGE/ 061
Date	13-09-2024
Inspected By	Mr. N.Ranjithkumar, Mr. D.Chermanraja
Site Operator	Mr. Samuthiram

Customer	M/s TNN Wind Tech		
WEG No	PS679	Location No.	01
Tower Height	50 Mtr's	HTSC No	2979
Capacity	600 kW	Site	Sampavar Vadakarai
Model	V47	D.O.C	29-09-2009

V47 BOTTOM

1	EB Customer Yard System	
1.1	Earth Pit slot	Customer side neutral line earth pit not available
1.2	EB, Customer, Control Room Painting	Painting work to be done.
1.3	EB Side Lightning Arrester (33KV)	All lightning arrester failed
1.4	Customer Side Lightning Arrester (33KV)	All lightning arrester failed
1.5	EB Side, Customer Side Handle Earth	Not available
1.6	All Insulator	EB DP structure AB switch "R" phase PT alignment required
1.7	EB Meter Glass	Not available
1.8	EB Side, Customer Side AB switch Working Condition	EB side AB switch not function.
2	Power Transformer	
2.1	Transformer Oil Level	Level low need to be top-up
2.2	Transformer Temperature Gauge	Failed
2.3	Transformer Oil Leakage	Ok
2.4	Transformer Breather Silica gel	Ok
2.5	Transformer Termination & Cover Bolt	Stand-by used , cover not fixed properly, Re termination required
2.6	Transformer Earth Plate Connection	Ok
2.7	Transformer Gland & Earth	Not available
3	Safety	
3.1	Earth Rod – 3No's	Not available
3.2	Fire Extinguisher	Ok
3.3	Fire Bucket Sand – 2 No's With stand	Bucket 2 no not available
3.4	33KV Hand Gloves	Not available
3.5	Rubber Mat	Ok
3.6	Safety Guide Photo	Not available
3.7	First Aid Box	Not available

4	Control Room	
4.1	Tube Light In & Out	Outer to be fixed
4.2	Light MCB – 2 Pole	Ok
4.3	Room Window Glass	Window glass full damage. To be corrected
4.4	Power Cable Stand Platform	Ok
5	Ground To Top Cable System	
5.1	3 Phase Cable 4 Core	Ok
5.2	Auxiliary Cable 5 Core	Ok
5.3	Light Cable 4 Core	Ok
5.4	EMC Cable 10 Core	2 core failed out of 10 core. (EMC connection 2-3 Loop)
5.5	Earth Cable Top to Bottom	Ok
5.6	Fiber Optic Cable	Ok
6	Ground Main Panel System	
6.1	Watchdog	Ok
6.2	Timer	Ok
6.3	Air To Air 6" Cooler Fan (2 No's)	Ok
6.4	Stabilizer 2KVA	Ok
6.5	Capacitor 4" Cooling Fan (2 No's)	Not available
6.6	Den Card Surge Arrester	Ok
6.7	63A Fuse	Ok
6.8	2S Relay	Ok
6.9	1B Relay	Ok
6.10	24V Indication Lamp	Ok
6.11	Thyristor	Ok
6.12	EH 550 Contactor	Ok

6.13	RCC Circuit	Ok
6.14	Generator Breaker Mechanism	Ok
6.15	Controller Switch Mechanism	Controller switch handle not available and rod not available
6.16	Gen Cable Termination Ground	Ok
6.17	CT Coil (600/1) – 3No's	Ok
6.18	Panel Door Hinge	Ok
6.19	Panel Door Lock	3 nos damaged, M6 X 30 screw 8 no's not available
6.20	1.5V Processor Cell Box	Ok
6.21	Power Cable PG – Gland	PG16 – 2 no's, PG21-1 no not available
6.22	1 A Transformer	Ok
6.23	EMC Switch	Ok
6.24	Trip Q8 Test (MENU 13A)	Ok
7	ACB System	
7.1	Ammeter	Ok
7.2	Voltmeter	Ok
7.3	Ammeter, Voltmeter selector switch	Ok
7.4	230V Indication Lamp (R, Y, B)	Y phase failed
7.5	25VA Transformer	Not available
7.6	350VA Transformer	Ok
7.7	2A Glass Fuse & 20A Fuse Holder	MCB used
7.8	ACB Safety Acrylic Sheet	Not available
7.9	ACB Current Coil (800/1) (3No's)	Ok
7.10	ACB Termination Cable & Bus pare	Ok

7.11	ACB Handle Rod	Not available
7.12	ACB Working Condition	Ok
8	Additional Panel System	
8.1	400A MCB Mechanism	Rod not available
8.2	Cooling Fan 4"	Failed
8.3	Dust Filter Cover	Damaged
8.4	Danger Cover	Not available
8.5	Door Lock	Ok
9	Pitch System Checking	
9.1	Balluff Sensor Value 0.041, 9.853	0.039; 9.830
9.2	Hydraulic Pump Holding Time 0 To 200 bar	45 sec
9.3	proportional Valve Holding Time (180 To 200 Bar Time)	2.52 minutes
9.4	Sine Test	Ok
9.5	Pitch Acc Bar	80.4 bar
9.6	Alarm Lock Fault Check	Ok
10	All Temperature °c	
10.1	Ambient	34°C
10.2	Gen 1	70°C
10.3	Nacelle	36°C
10.4	Control	39°C
10.5	Hydraulic	45°C
10.6	Gear Oil	65°C
10.7	Gear Bearing	60°C

11	Tower system	
11.1	Top to bottom all bolts	Ok
11.2	Tower earth	Ok
11.3	Tower vibration	Ok

12.1 MAIN PANEL CAPACITOR TEST				
	STEP 1 25 X 2	STEP 2 25 X 2	STEP 3 25 X 2	STEP 4 25 X 2
L1 – V 387	32	35	40	34
L2 – V 385	33	35	40	35
L3 – V 384	31	34	39	35

12.2 ADDITIONAL PANEL CAPACITOR TEST				
	STEP 1 25 X 2	STEP 2 25 X 1	Grid 25 X 1	Additional
L1 – V 378	34	19	19	
L2 – V 379	33	20	19	
L3 – V 378	34	20	18	

GROUND REMARKS:

1. Customer side neutral earth pit 1 no not available.
2. DP yard structures and control room, painting to be done.
3. EB and customer side all lightning arrester not available.
4. EB and customer side handle earth not available.
5. EB side R phase PT insulator not properly fixed. Alignment work required
6. EB meter glass not available.
7. Power transformer oil level low.
8. Power transformer temperature gauge failed.
9. **Power transformer stand by used**, terminal cover not properly fixed.
10. Power transformer cable gland earth not available.
11. Safety belt, helmet, hand gloves, first aid box not available.
12. Earth rod not available, fire bucket 2 no's not available.
13. Control room outside tube light 3 no's failed.
14. Control room window glass damaged, to be corrected.
15. Trip Q8 not working, EMC cable 2, 3 failed.
16. Main panel and additional panel 4"cooling fan 3 no's failed.
17. Controller switch rod with handle not available.
18. Main panel door lock 3 no's broken.
19. M6 X 30 screw 8 no's to be used.
20. Cable gland PG16 -2 no's & PG21 – 1 no not available.
21. 415V indicator lamp y phase failed.
22. ACB safety sheet not available.
23. ACB operating rod not available.
24. APFC panel operating rod not available.
25. Air filter duct cover damaged.

V47 TOP

13	Hydraulic Unit System	
13.1	Hydraulic Unit Damper	Settle down, need to be replaced
13.2	Hydraulic Motor Bearing Noise	Ok
13.3	Hydraulic Cooling Fan Leaf & Cover	Leaf not available
13.4	Hydraulic Oil Level	Oil level low, recommend to refill
13.5	Hydraulic Oil Condition	Ok
13.6	Oil Level Sensor CT3218 – 3 Led	Ok
13.7	Hydraulic Oil Leakage	Nil
13.8	Pitch Cylinder Oil Leakage	Nil
13.9	Balluff Sensor Safety Cover	Ok
13.10	17 Bar Pressure Switch	Ok
13.11	10 Bar Pressure Switch	Ok
13.12	Pitch & Brake Pressure Relief valve	Ok
13.13	Hydraulic Motor Cable	Ok
13.14	Hydraulic Hose A	Ok
13.15	Hydraulic Hose B	Ok
13.16	Hydraulic Hose C	Ok
13.17	Hydraulic Hose D	Ok
13.18	Hydraulic Dummy Hose & Adapter	Ok
13.19	Hydraulic Hose Laying Sandwich	Ok
13.20	Pitch Cylinder Safety Cover	Ok (M8 X 15 bolt washer 2 no's not available)
13.21	Brake Accumulator	Ok
14	Gear Box System	
14.1	Gear Oil Level	Ok
14.2	Gear Oil Condition	Recommend to change
14.3	Air Filter	Ok


14.4	Gear Oil Filter	Ok
14.5	Gear Box Magnetic Rod	Metal sediment collected from magnetic rod
14.6	Gear Box Manifold Oil Leakage	Ok
14.7	Radiator Oil Leakage	Ok
14.8	Gear Oil Hose L	Ok
14.9	Gear Oil Hose S	Ok
14.10	Gear Box Noise	Nil
14.11	Gear Stay Function	Bearing play observed, need to be replaced
14.12	Low Speed Oil Seal	Ok
14.13	Hallow Shaft Cover Crack	Ok
14.14	Low Gear Oil Switch CT 3133 – 6 Led (750RPM)	Ok
14.15	Pitch Bearing	Nitrile rubber damaged
14.16	Gear oil leakage	Ok
14.17	Gear box 'I' Hook	Ok
15	Yawing System	
15.1	Yaw Motor Cable	Ok
15.2	Yaw Motor Leaf & Cover	LHS cover not available
15.3	Warm Gear Noise & Bearing	Ok
15.4	Warm Gear Oil Level	Glass full rust
15.5	Warm Gear Oil Leakage	Leakage observed on top gasket (LHS)
15.6	Yaw Top Teeth	Ok
15.7	Yaw Top Safety Cover (Aluminum)	Ok
15.8	Yaw Stopper Block M16	Ok
15.9	Yaw Top Bed Bolt	Ok

16	Generator System	
16.1	Gen Bearing Noise	Ok
16.2	Gen Cooling Fan Leaf	Ok
16.3	Gen Damper	Settle down, need to be replaced
16.4	Gen Termination	Ok
16.5	Gen Cable Gland	Ok
16.6	Gen Cable Clamp & Plate	Ok
16.7	Gen Nipple	Ok
16.8	Gen Bed Earth	Ok
16.9	Gen, I Hook	Ok
17	Brake System	
17.1	Brake Pad Thickness	Ok
17.2	Brake Pad Bypass Box - 4 (1-2)	Ok
17.3	Brake Pad Signal - 3 Set (Generator Side or Gear Box Side)	Ok
17.4	Brake Caliber – 3No's	Ok
17.5	Brake Caliber Metal Hose	Ok
17.6	Brake Disc Thickness	Ok
17.7	Brake disc heat absorb	Ok
17.8	Brake Disc Cover Top and Bottom	Top cover bolt M8 X 15 – 1 no not available
17.9	CD Coupling Disc	Ok
17.10	CD Coupling Cover	Ok
17.11	Fire Safety Sheet	Not available
17.12	CD Coupling Noise	Not available

18	Battery Box System	
18.1	12V Battery	Ok
18.2	24V Charger	Ok
18.3	Box 230V Cable	Ok
18.4	Box 8 Core 24V Cable	Ok
18.5	Timer Make	Omron
18.6	Battery Box Cover	Ok
18.7	Top Panel Loop Check (95-21) (21-12) (11-31)	Ok
18.8	Soft Brake Working	Ok
18.9	Soft Brake Modification	Ok
18.20	2S Relay Make	Omron 4s relay
19	Nacelle Light System	
19.1	16 A Switch Box	Damaged
19.2	Top, Front & Back Tube Light	Generator side light failed
19.3	Tube Light Cable	Ok
20	Top Panel System	
20.1	Contactor Yaw CW	Ok
20.2	Contactor Yaw CCW	Ok
20.3	Contactor Hydraulic	Ok
20.4	Contactor Low speed	Ok
20.5	Contactor High Speed	Ok
20.6	Contactor Exhaust Fan	Ok
20.7	Thermal Relay Yaw CW	Ok
20.8	Thermal Relay Yaw CCW	Ok
20.9	Thermal Relay Hydraulic	Ok

20.10	Thermal Relay Low Speed	Ok
20.11	Thermal Relay High Speed	Ok
20.12	Thermal Relay Exhaust Fan	Ok
20.13	2S Relay	Ok
20.14	1B Relay	Ok
20.15	VOG CT279	Ok
20.16	Top Panel Cooling Fan	Ok
20.17	Main Bearing Emergency Button	Ok
20.18	Top Panel Emergency Button	Ok
20.19	Yaw Top Emergency Button	Ok
20.20	Top Panel Door	Ok
20.21	Top Panel Door Hinge	Ok
20.22	Top Panel Damper	Ok
20.23	Top Panel stand clamp	Ok
20.24	SMPS	Ok
20.25	1.5V Processor Cell Box	Ok
20.26	Rectifier	1 no used
20.27	Trip Q8 Switch Working	Not working / emergency cable 2core failure.
21	Main Shaft System	
21.1	Main Bearing Noise & Play	Not available
21.2	Main Bearing Grease Leakage	Back and front leakage observed
21.3	Main Bearing Front and Back Cover	M12 X 50 bolt 1 no not available
21.4	Rotor Sensor	Ok
21.5	VOG Sensor	Ok

21.6	Generator sensor	Ok
21.7	Main Bearing 24V Junction Box	Ok
21.8	Air Breather	Ok
21.9	Nipple Main Bearing	Ok
22	Blade System	
22.1	Blade Crack	Ok
22.2	Blade Arm Bearing	Ok
22.3	Blade Bearing Play	Ok
22.4	Blade Inspection Closing Cover- 3	1 no not available
22.5	Pitch Shaft Sliding shoe	Ok
22.6	Pitch Bolt M12 (8 No's)	Ok
22.7	Blade Flop Cover	3 no's not available
22.8	Hub Entrance Door	Need to be fixed properly
22.9	Blade Breather	Ok
22.10	Nose Cone Crack	Ok
22.11	Nose Cone 'L' Clamp	Ok
22.12	Nose Cone Zig Door	Ok
22.13	Nose cone Ring U Clamp	Ok
22.14	Blade Lip Seal Grease Leakage in and out	1 no blade inner and outer side leakage observed
22.15	Blade Safety Lock Block	Ok
23	Gear Oil Cooler Motor System	
23.1	Motor Bearing Noise	Ok
23.2	Cooler Motor Leaf Cover	Ok
23.3	Motor Cable Slow	Ok

23.4	Motor Cable High	Damaged
23.5	Air Duct Cover	Not available
23.6	Cooler Motor Bed Stand	Ok
23.7	Big Leaf	Ok
24	Power Cable Twisting	
24.1	Twist Sensor	Ok
24.2	Power Cable Twist	Power cable twist observed, need to be corrected
24.3	Cable Round Ring	Cable dressing to be done
24.4	 Clamp	M16 X 50 bolt set 1 no not available
24.5	Bottom to Top cable laying	Looping to top need to be corrected
24.6	Nacelle Platform Cable Holding Sandwich	Ok, bolt and nut 4 no's not available
24.7	Power Cable Insulation	Weak condition
24.8	Nacelle Platform Small Cable Lock Clamp	Ok
25	Hoist System	
25.1	Remote Function	Pendent not available
25.2	Hoist 230v Box	Damaged
25.3	Chain Bag & Clamp	Not available
25.4	Chain Hook	Ok
25.5	Hoist Noise	Not working
25.6	Hoist 230v Cable	Ok
25.7	Hoist Chain Block	Ok
25.8	Safety Chain & Lock Hook	Not available
26	Anemometer	
26.1	Anemometer Bearing	Ok
26.2	Anemometer Cup, Holder & Cable	Ok
26.3	Stand	Ok

27	Wind vane System	
27.1	Wind vane Bearing	Ok
27.2	Wind vane Holder & Cable	Ok
27.3	Wind vane Cap Nut	Ok
28	Nacelle Door System	
28.1	Nacelle Cover Crack	Ok
28.2	Nacelle Back Door	Not available, hinges damaged
28.3	Nacelle Sky Window Top	Damaged
28.4	Nacelle Lightning Spike	Damaged
28.5	Lightning Spike Earth	Ok
28.6	Nacelle damper Front & back	Back side settle down, need to be replaced
28.7	Vibration Sensor	Ok
28.8	Nacelle Platform Steel Door	Ok
28.9	Nacelle Platform Ladder	Ok
28.10	Nacelle Cover Damper	Ok
29	Exhaust Fan System	
29.1	Motor Bearing Noise	Ok
29.2	Fan Leaf & Cover	Ok
29.3	Bush, Waser & Bolt	Ok
29.4	Motor Cable	Insulation damaged
29.5	Big Fan Leaf	Ok
30	Rotor And Blade Safety System	
30.1	Rotor Lock Bush – 4	1 no not available
30.2	Rotor Lock Hide Pin -4	Ok

30.3	Rotor Big Plate -1	Ok
30.4	Rotor Small Plate -1	Not available
30.5	86 Rocket – 3	Ok
30.6	86 Thread Rod – 3	Ok
30.7	washer -3, Nut -3	1 no not available
30.8	Grease Tray – 3	1 no not available
30.9	Disc Lock Bolt -1	Not available
31	Gear Box inner components	
31.1	Gear bearing High speed Play	High speed bearing play observed
31.2	Gear bearing Low speed Play	Ok
31.3	Check gear box body damages	Ok
31.4	Check in side of Gear box	Ok
31.5	Gear teeth @ low speed	Ok
31.6	Gear teeth @ high speed	Ok
31.7	Gear teeth @ intermediate	Ok
31.8	Gear intermediate pinion	Ok
31.9	Planetary gear	Visual inspection is not possible.
31.10	Gear Pump oil circulation	Ok
32	Blade Bearing	
32.1	Every 5 th blade bearing bolts M20 to be check out of 60No's	Ok
32.2	Blade Vertical play to be checked	Ok
32.3	Blade horizontal play to be checked	Ok
33	Transformer and Generator	
33.1	Necessary to check Transformer terminal box	Power transformer standby fixed terminal cover not fixed properly
33.2	Necessary to check Generator terminal box	Terminal cover bolt 1 no damaged and 1 no not available















TOP REMARKS:

1. Gear stay 2 no's failed, need to be replaced
2. Hydraulic vibration damper settle down need to be replaced
3. Hydraulic motor cooling leaf not available
4. Hydraulic oil need to top up
5. Pitch cylinder safety cover bolt M8 X 15 1no not available
6. Gear oil replacement to be done
7. Pitch bearing nitrile washer damaged
8. Yaw motor LHS side cover not available
9. Worm gear LHS side top gasket side oil leakage observed
10. Worm gear oil level glass need to be cleaned
11. Generator back side vibration damper settled down, need to be replaced complete set.
12. Generator terminal cover bolt 1 no damaged, 1 no not available
13. Brake disc top cover M8 X 58 bolt 1 no not available
14. 16A switch box damaged
15. Nacelle light failed, need to be replaced
16. Trip Q8 not working
17. Main bearing rear and front side grease leakage observed
18. Blade inspection closing cover 1 no not available
19. Hub entrance cover lock screw 6 no not available
20. Blade 1 no inner and outer side grease leakage observed
21. Oil cooler motor cable insulation damage.
22. Gear oil cooler air duct cover not available.
23. Platform Power Cable Holding Sandwich bolt & 4no's to be provided
24. Cable dressing to be done at round ring
25. "U" clamp M16 X 50 bolt 1 no not available
26. All power cable insulation weak condition
27. Winch pendent not available
28. Winch chain box not available
29. Winch not functions
30. Nacelle back door hinges damaged, door kept at control room
31. Nacelle sky window lock damaged

- 32. Lightning spike damaged
- 33. Nacelle vibration damper rear side settle down
- 34. Exhaust fan motor cable insulation damaged
- 35. Rotor lock push 1 no not available
- 36. Rotor lock 1 no not available
- 37. Thread rod washer and nut not available
- 38. Gear High speed bearing play observed, Metal sediment collected from magnetic rod
- 39. Nacelle plat form power cable holding sandwich bolt set 4 no's not available.
- 40. Metal sediment collected from magnetic rod



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Sl.No.	Observation details as of WEG Ltd inspection	Photos showing remarks/ Witness	Sl.No.	Observation details as of WEG Ltd inspection	Photos showing remarks/ Witness
1	Gear stay 2 no's failed, need to be replaced		9	Gear oil replacement to be done	
2	Hydraulic vibration damper settle down need to be replaced		10	Yaw motor LHS side cover not available and Worm gear LHS side top gasket side oil leakage observed	
3	Hydraulic motor cooling leaf not available, oil level low		11	Gear oil cooler motor cable insulation damage	
4	Generator back side vibration damper settled down		12	Winch pendent & chain box not available, winch not working.	
5	Nacelle vibration damper rear side settle down		13	Power cable twist to be corrected and cable dressing to be done. Power cable insulation weak condition	
6	High speed bearing play observed		14	Blade 1 no inner and outer side grease leakage observed	
7	16A switch box damaged		15	HTDP yard structure, control room, painting to be done	
8	Power transformer stand by used, terminal cover not properly fixed		16	Metal sediment collected from gear magnetic rod	

Conclusion:

In general, various missing components and un-repairable failed components have to be replaced along with the repair / servicing of various defective parts identified in the inspection. It appears that proper preventive maintenance and immediate attention to various issues has to be addressed.