

Maintenance checks report

Checklist name	Year
05_MV - Site proposal - season 6	6

Site	Turbine serial number	Order number
Wikinger WK45	WK45 - 1121485	60606650
Language	Revision date checklist	Approval date
en-US	2/21/2024	3/18/2024

Siemens Gamesa Renewable Energy S.A. Parque Tecnológico de Bizkaia, Edificio 222, 48170, Zamudio, Vizcaya, Spain
+34 944 03 73 52 – info@siemensgamesa.com – www.siemensgamesa.com

1. Tools

Tools				
Group	#	Name	Calibration ID	Remarks
1	1	Battery tester (Dummy-Adw020)	Fluke 61520098	

2. Check details

2.1. Checks from the maintenance plan

ECN				
AD 5-135_1_1_5_MV_year_null				
#	Measuring points	Remarks	Tools	Status
Location: Nacelle inside				
1	ATD000276.0: Generator - Overload clutch and bolts - Inspection			✓
2	ATD000276.1: Generator - Overload clutch body spring - Inspection			✓
3	ATD000276.2: Generator - Overload clutch mark aligned with rotor mark - Inspection			✓
4	ATD000373.0: Slip ring unit - Power bushes and rings - Inspection			✓
5	ATD000373.1: Slip ring unit - Signal bushes and rings - Inspection			✓
6	ATD000377.0: Generator - Upper grounding brush - Inspection			✓
7	ATD000377.1: Generator - Upper grounding brush support component - Inspection			✓
8	ATD000377.2: Generator - Middle grounding brush - Inspection			✓
9	ATD000377.3: Generator - Middle grounding brush support component - Inspection			✓
10	ATD000377.4: Generator - Bottom grounding brush - Inspection			✓
11	ATD000377.5: Generator - Bottom grounding brush support component - Inspection			✓
12	ATD000605.0: Generator - Enclosure of the machine and all holding fixtures - Inspection			✓
13	ATD000605.1: Generator - Stator covers seal & winding connections tightness and external damages - Inspection			✓
14	ATD000605.2: Generator - Terminal box and all the connections - Inspection			✓
15	ATD000605.3: Generator - Rotor - Inspection			✓
Location: Tower				
16	ADWI017124.10: Main UPS - Cabinet structure - Inspection			✓
17	ADWI017124.11: Main UPS - Battery trays - Inspection and torque			✓
18	ADWI017124.12: Main UPS - Platform fixation - Inspection and torque			✓

AD 5-135_1_1_5_MV_year_null				
#	Measuring points	Remarks	Tools	Status
Location: Tower				
19	ADWI017124.1: Main UPS - External cover panels - Inspection and torque			✓
20	ADWI017124.2: Main UPS - Cabinet doors are correctly closed and the handles work properly - Inspection			✓
21	ADWI017124.3: Main UPS - Upper/ lower locking plates - Inspection and torque			✓
22	ADWI017124.4: Main UPS - Fastening claws - Inspection and torque			✓
23	ADWI017124.5: Main UPS - Locking brackets - Inspection and torque			✓
24	ADWI017124.6: Main UPS - Locking rods - Inspection and torque			✓
25	ADWI017124.7: Main UPS - Locking rod end - Inspection			✓
26	ADWI017124.8: Main UPS - Hinges - Auditory inspection			✓
27	ADWI017124.9: Main UPS - Internal structure - Inspection and torque			✓
28	ATD000311.6: Wind turbine system - Emergency stop button at lift frame - Test			✓
29	ATD000383.0: Converter - Main components on the CCU - Inspection			✓
30	ATD000383.10: Converter - Ground connection - inspection			✓
31	ATD000383.11: Converter - Lateral fan with heater in CCU - inspection			✓
32	ATD000383.12: Converter - Roof fan in FIU - Inspection	Remark 1 +A11 roof fan E201 is not working		✓
33	ATD000383.13: Converter - Roof and door fan in POU - inspection	Remark 1 +A22 roof fan E102 is not working		✓
34	ATD000383.14: Converter - Roof and door fan in DLU - inspection			✓
35	ATD000383.15: Converter - Pump - Auditory inspection			✓
36	ATD000383.16: Converter - Pump has no leakages - Inspection			✓
37	ATD000383.17: Converter - Vessel hoses - Inspection			✓
38	ATD000383.1: Converter - Cable connections on the CCU - inspection			✓
39	ATD000383.2: Converter - Main components on the FIU - Inspection			✓

AD 5-135_1_1_5_MV_year_null				
#	Measuring points	Remarks	Tools	Status
Location: Tower				
40	ATD000383.3: Converter - Cable connections on the FIU - inspection			✓
41	ATD000383.4: Converter - Main components on the POU - Inspection			✓
42	ATD000383.5: Converter - Cable connections on the POU - inspection			✓
43	ATD000383.6: Converter - Main components on the DLU - Inspection			✓
44	ATD000383.7: Converter - Cable connections on the DLU - inspection			✓
45	ATD000383.8: Converter - Main components on the WCU - Inspection			✓
46	ATD000383.9: Converter - Cable connections on the WCU - inspection			✓
47	ATD000511.0: Converter cooling system - Pipe water circuit - Inspection			✓
48	ATD000512.2: Converter cooling system - Pump 1 slip ring sealing - Replace			✓
49	ATD000512.3: Converter cooling system - Pump 2 slip ring sealing - Replace			✓
50	ATD000538.0: Emergency lights UPS - Door fan - Auditory inspection			✓
51	ATD000538.1: Emergency lights UPS - Manual battery test - Test			✓
52	ATD000538.2: Emergency lights UPS - Fuses F4, F5, F6, F7, F8 and F9 - Inspection			✓
53	ATD000538.3: Emergency lights UPS - All internal components and wiring - Inspection			✓
54	ATD000538.4: Emergency lights UPS - Battery box - Inspection			✓
55	ATD000538.5: Emergency lights UPS - Thermostats properly adjusted - Inspection			✓
56	<div>ATD000538.6: Emergency lights UPS - Measurement points - Measure</div> <div> <div>G6 Voltage</div> <div>+12,86 V</div> </div> <div> <div>G6 Resistance</div> <div>+10,14 mOhm</div> </div> <div> <div>G5 Voltage</div> <div>+12,91 V</div> </div> <div> <div>G5 Resistance</div> <div>+10,83 mOhm</div> </div> <div> <div>G4 Voltage</div> <div>+12,79 V</div> </div> <div> <div>G4 Resistance</div> <div>+11,29 mOhm</div> </div>			✓

AD 5-135_1_1_5_MV_year_null				
#	Measuring points	Remarks	Tools	Status
Location: Tower				
	G3 Voltage	+12,80 V		
	G3 Resistance	+10,95 mOhm		
	G2 Voltage	+12,87 V		
	G2 Resistance	+10,77 mOhm		
	G1 Voltage	+12,86 V		
	G1 Resistance	+11,66 mOhm		
57	ATD000538.7: Emergency lights UPS - Tightness of all nips of each terminal and the fixed terminal adapter on the back - Inspection			✓
58	ATD000538.8: Emergency lights UPS - Filter and exhaust filter mats - Replace, if necessary		Remark 1 Replaced	✓
59	ATD000559.2: Platform 6 - Bolted joints according to ATD000562 - inspection			✓
60	ATD000586.0: Main UPS - Remote battery test - Test Battery tester			✗
		Yes		
61	ATD000586.10: Main UPS - Batteries cabinet - Inspection			✓
62	ATD000586.11: Main UPS - Measurement points - Measure			✓
	G33-G64 Voltage	+436,7 V		
	G1-G32 Voltage	+435,2 V		
	G33-G64 Stock number			
	24-2061			
	G33-G64 Type number			
	JL205580			
	G1-G32 Type number			
	JL205580			
	G1-G32 Stock number			
	24-2061			
63	ATD000586.1: Main UPS - Cabinet - Inspection			✓
64	ATD000586.2: Main UPS - Filter mats - Replace			✓

AD 5-135_1_1_5_MV_year_null				
#	Measuring points	Remarks	Tools	Status
Location: Tower				
65	ATD000586.3: Main UPS - Manual by-pass (UPS disconnection) activation/ restarting performed? - Inspection			✓
66	ATD000586.4: Main UPS - LEDs states of rectifier and inverter - Inspection			✓
67	ATD000586.5: Main UPS - Output voltages of the rectifier - Measure Voltage in RCB <div>+410,2 V</div>			✓
68	ATD000586.6: Main UPS - Output voltages of the static by-pass - Measure Voltage in Q1 <div>+410,4 V</div>			✓
69	ATD000586.7: Main UPS - Output voltages of the inverter - Measure Voltage in OCB <div>+399,6 V</div>			✓
70	ATD000586.8: Main UPS - UPS battery cabinet temperature (VISU) - Measure Temperature (VISU) <div>+16,6 °C</div>			✓
71	ATD000586.9: Main UPS - Output voltages from battery cabinet - Measure Voltage in BCB: 435.8V (25°C) <div>+446 V</div>			✓
72	ATD000613.0: Medium-Voltage cabling - Converter input/ output MV cables - Inspection			✓
73	ATD000613.1: Medium-Voltage cabling - S1-S2 MV cables - Inspection			✓
74	ATD000613.2: Medium-Voltage cabling - Cables along the trays between the switchgears in the S3 and the connection chambers in the TP - Inspection			✓
75	ATD000644.1: Auxiliary transformer - Earthing connections - Inspection			✓
76	ATD000644.2: Auxiliary transformer - Oil leakage - Inspection			✓
77	ATD000644.4: Auxiliary transformer - Terminal connections - Inspection			✓
78	ATD000647.0: Main transformer - Oil leakage - Inspection			✓
79	ATD000647.1: Main transformer - Paint - Inspection			✓
80	ATD000647.2: Main transformer - Earthing connection - Inspection			✓
81	ATD000647.4: Main transformer - Cooling system - Inspection			✓
82	ATD000647.5 : Main transformer - Resistance thermometer - Test Temperature difference <div>+6 °C</div>			✓

AD 5-135_1_1_5_MV_year_null				
#	Measuring points	Remarks	Tools	Status
Location: Tower				
83	ATD000668.3: UPS - Axial fans - Replace			✓
84	ATD000668.4: UPS - Filter fans - Replace			✓
85	ATD000690.1: Converter - Filter mats - Replace	Remark 1 Replaced		✓