

Maintenance checks report

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

| Site | Turbine serial number | Order number |
|----------|-------------------------|---------------|
| | WK38 - 1121478 | 60606602 |
| Language | Revision date checklist | Approval date |
| en-US | 2/21/2024 | 8/5/2024 |

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1. Tools

| Tools | | | | |
|-------|---|-------------------------------|---|---------|
| Group | # | Name | Calibration ID | Remarks |
| 1 | 1 | Battery tester (Dummy-Adw020) | https://secure.elementmetech.com/MIO3/dl?x=18E103AEEE2123E52G264990?2661728-1 | |

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 | | | N/A |
| 18 | ADWI017124.12: Main UPS - Platform fixation - Inspection and torque | | | N/A |

| 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 | | | ✓ |
| 33 | ATD000383.13: Converter - Roof and door fan in POU - inspection | Remark 1 A21 roof fan bearing has grinding noise but functional for the moment | | ✓ |
| 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>G1 Voltage</div> <div>+13,6 V</div> </div> <div> <div>G2 Resistance</div> <div>+9,5 mOhm</div> </div> <div> <div>G2 Voltage</div> <div>+13,6 V</div> </div> <div> <div>G3 Resistance</div> <div>+8,6 mOhm</div> </div> <div> <div>G3 Voltage</div> <div>+13,5 V</div> </div> <div> <div>G4 Resistance</div> <div>+9,3 mOhm</div> </div> | | | ✓ |

| AD 5-135_1_1_5_MV_year_null | | | | |
|-----------------------------|---|--|-------|--------|
| # | Measuring points | Remarks | Tools | Status |
| Location: Tower | | | | |
| | <div>G4 Voltage</div> <div>+13,6 V</div> <div>G5 Resistance</div> <div>+9,4 mOhm</div> <div>G5 Voltage</div> <div>+13,5 V</div> <div>G6 Resistance</div> <div>+8,5 mOhm</div> <div>G6 Voltage</div> <div>+13,6 V</div> <div>G1 Resistance</div> <div>+9,4 mOhm</div> | | | |
| 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 | | | ✓ |
| 59 | ATD000559.2: Platform 6 - Bolted joints according to ATD000562 - inspection | | | ✓ |
| 60 | <div>ATD000586.0: Main UPS - Remote battery test - Test</div> <div>Report other tool usage</div> <div>PLC Data analyst</div> <div>Battery tester</div> <div>No</div> | <div>Remark 1</div> <div>will be done remotely</div> | | |
| 61 | ATD000586.10: Main UPS - Batteries cabinet - Inspection | | | ✓ |
| 62 | <div>ATD000586.11: Main UPS - Measurement points - Measure</div> <div>G1-G32 Voltage</div> <div>+433 V</div> <div>G33-G64 Voltage</div> <div>+433 V</div> <div>G1-G32 Stock number</div> <div>31666HWL11</div> <div>G33-G64 Stock number</div> <div>31666HWL11</div> <div>G1-G32 Type number</div> <div>CTL100-12</div> <div>G33-G64 Type number</div> <div>CTL100-12</div> | | | ✓ |
| 63 | ATD000586.1: Main UPS - Cabinet - Inspection | | | ✓ |

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|-----------------------------|---|---------|-------|--------|
| # | Measuring points | Remarks | Tools | Status |
| Location: Tower | | | | |
| 64 | ATD000586.2: Main UPS - Filter mats - Replace | | | ✓ |
| 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>+404 V</div> | | | ✓ |
| 68 | ATD000586.6: Main UPS - Output voltages of the static by-pass - Measure Voltage in Q1 <div>+404 V</div> | | | ✓ |
| 69 | ATD000586.7: Main UPS - Output voltages of the inverter - Measure Voltage in OCB <div>+400 V</div> | | | ✓ |
| 70 | ATD000586.8: Main UPS - UPS battery cabinet temperature (VISU) - Measure Temperature (VISU) <div>+27,6 °C</div> | | | ✓ |
| 71 | ATD000586.9: Main UPS - Output voltages from battery cabinet - Measure Voltage in BCB: 435.8V (25°C) <div>+431 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 | | | ✓ |

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|-----------------------------|---|---------|-------|--------|
| # | Measuring points | Remarks | Tools | Status |
| Location: Tower | | | | |
| 82 | ATD000647.5 : Main transformer - Resistance thermometer - Test Temperature difference <div>+2 °C</div> | | | ✓ |
| 83 | ATD000668.3: UPS - Axial fans - Replace | | | ✓ |
| 84 | ATD000668.4: UPS - Filter fans - Replace | | | ✓ |
| 85 | ATD000690.1: Converter - Filter mats - Replace | | | ✓ |