### COMMISSIONING REPORT

<table>
<thead>
<tr>
<th>Manufacturer:</th>
<th>ABB Tellhow generators Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>3088 Zi Yang Avenue</td>
</tr>
<tr>
<td></td>
<td>High-Tech Development Zone</td>
</tr>
<tr>
<td></td>
<td>330096 Nanchang</td>
</tr>
<tr>
<td></td>
<td>Jiangxi, P.R.China</td>
</tr>
<tr>
<td>Telephone:</td>
<td>+86 791 835 0800</td>
</tr>
<tr>
<td>Telefax:</td>
<td>+86 791 835 0814</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Address:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact Person:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone:</td>
</tr>
<tr>
<td>Mobile phone:</td>
</tr>
<tr>
<td>Fax:</td>
</tr>
<tr>
<td>Email:</td>
</tr>
</tbody>
</table>
## 1 Transportation

### General:

<table>
<thead>
<tr>
<th>Arrival date of the machine:</th>
<th>Arrival date of the machine:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection date and location:</td>
<td>Inspection date and location:</td>
</tr>
<tr>
<td>Signature of consignee:</td>
<td>Signature of consignee:</td>
</tr>
<tr>
<td>Open box inspection:</td>
<td>Open box inspection:</td>
</tr>
</tbody>
</table>

### Damages:

<table>
<thead>
<tr>
<th>Packing list:</th>
<th>Packing list:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine:</td>
<td>Machine:</td>
</tr>
<tr>
<td>Package:</td>
<td>Package:</td>
</tr>
<tr>
<td>Accessories:</td>
<td>Accessories:</td>
</tr>
<tr>
<td>Spare parts + tools:</td>
<td>Spare parts + tools:</td>
</tr>
</tbody>
</table>

### Actions Taken in Response to Damages:

<table>
<thead>
<tr>
<th>Photographed:</th>
<th>Photographed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported to the transportation company:</td>
<td>Reported to the transportation company:</td>
</tr>
<tr>
<td>Reported to the supplier:</td>
<td>Reported to the supplier:</td>
</tr>
<tr>
<td>Reported to the insurance company:</td>
<td>Reported to the insurance company:</td>
</tr>
</tbody>
</table>

### Method of Transportation:

- Railway
- Airfreight
- Truck
- Mail
- Shipped by M/S
- Other: Other:

### Comments:

Comments:
### 2 Storage

**General:**

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Time Longer than 6 Months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person Responsible for Storage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Storage Place:**

- indoors
- outdoors
- in packing case
- protected by a waterproof cover

Daily temperature: min/max. _____ - _____ °C  
Humidity: _____%

**Damages:**

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation package is ventilated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External heating/fan is used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine space heaters are used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bearings are flushed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft end anti-corrosion protection checked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft end anti-corrosion protection renewed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The rotor is turned 10 revolutions every two months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are vibrations in the storage place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are corrosive gases in the air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine documents are saved and protected for future use</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**
### 3 Mechanical Installation

| Foundation is checked according to machine drawing: | ☐ no ☐ yes, drawing number: ____________________________ |
| Possible foundation anchor bolts or sole plates are mounted according to instructions: | ☐ no ☐ yes |
| For alignment of the coupling, use either values 1-4 or values A-D | Radial alignment of coupling top |
| | Angular alignment of coupling top |
| 1 _________ | ![Diagram](image) |
| 2 _________ |  |
| 3 _________ |  |
| 4 _________ |  |
| A _________ |  |
| B _________ |  |
| C _________ |  |
| D _________ |  |
| Crankshaft deflection is checked: | ☐ no ☐ yes |
| Foundations bolts are tightened with torque wrench: | ☐ no ☐ yes, bolt size: ______________ torque: ______________Nm |
| Bolt lubrication: | ☐ dry ☐ oil, ☐ MoS₂ |
| Transport locking device is removed: | ☐ no ☐ yes |
| Rotor rotates without noise or scraping: | ☐ no ☐ yes |
4 Lubrication check

<table>
<thead>
<tr>
<th>Grease:</th>
<th>Manufacturer:</th>
<th>Type:</th>
</tr>
</thead>
</table>

The grease quality is the same as recommended on the lubrication plate: □ no □ yes

The first greasing has been done: Date:_______ Quantity:_______ g

Comments:
## 5 Electrical installation

<table>
<thead>
<tr>
<th>Network variation:</th>
<th>no</th>
<th>yes, voltage: ______ - ______ V, frequency: ______ - ______ Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space heater operation:</td>
<td>no</td>
<td>manual</td>
</tr>
</tbody>
</table>

### 5.1 Insulation Resistance Test

<table>
<thead>
<tr>
<th>Component</th>
<th>Resistance (MΩ)</th>
<th>Tested Voltage (kV)</th>
<th>Winding Temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stator winding (1 min.):</td>
<td>__________</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Stator winding (15 / 60 s. or 1 / 10 min.):</td>
<td>PI = ______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Rotor winding (1 min., 500 VDC):</td>
<td>__________</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Exciter stator (1 min., 500 VDC):</td>
<td>__________</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Space heater:</td>
<td>__________</td>
<td>(500 VDC)</td>
<td></td>
</tr>
<tr>
<td>Temperature detectors:</td>
<td>__________</td>
<td>(100 VDC)</td>
<td></td>
</tr>
<tr>
<td>N-end bearing insulation:</td>
<td>__________</td>
<td>(100 VDC)</td>
<td></td>
</tr>
</tbody>
</table>

### 5.2 Accessories resistance test

<table>
<thead>
<tr>
<th>Component</th>
<th>Resistance (Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stator 1 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Stator 2 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Stator 3 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Stator 4 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Stator 5 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Stator 6 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Bearing PT 100 D-end:</td>
<td>__________</td>
</tr>
<tr>
<td>Bearing PT 100 N-end:</td>
<td>__________</td>
</tr>
<tr>
<td>Air temperature 1 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Air temperature 2 PT 100:</td>
<td>__________</td>
</tr>
<tr>
<td>Space heater:</td>
<td>__________</td>
</tr>
</tbody>
</table>
**6 Machine protection settings**

<table>
<thead>
<tr>
<th>Protection Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overcurrent tripping</td>
<td>A</td>
</tr>
<tr>
<td>Instant overcurrent tripping</td>
<td>A</td>
</tr>
<tr>
<td>Overvoltage setting</td>
<td>no</td>
</tr>
<tr>
<td>Earth fault setting</td>
<td>no</td>
</tr>
<tr>
<td>Reverse power setting</td>
<td>no</td>
</tr>
<tr>
<td>Differential protection setting</td>
<td>no</td>
</tr>
<tr>
<td>Vibration monitoring</td>
<td>no</td>
</tr>
<tr>
<td>Temperature monitoring</td>
<td>no</td>
</tr>
<tr>
<td>- in stator winding</td>
<td>yes</td>
</tr>
<tr>
<td>- in bearing</td>
<td>yes</td>
</tr>
<tr>
<td>- in ________________________________</td>
<td>yes</td>
</tr>
<tr>
<td>Other protection units</td>
<td>no</td>
</tr>
</tbody>
</table>
7 Test Run

7.1 First start (a few seconds only)

Direction of rotation (viewed from D-end):  
- CW  
- CCW  

Are there abnormal noises?  
- no  
- yes, from:   

7.2 Second start (uncoupled, if possible)

Note: Check that possible force lubrication is on!

Are there abnormal noises?  
- no  
- yes, from:   

Does the machine vibrate abnormally?  
- no  
- yes, where/how:   

Bearing vibration level measured:  
- D-end: ______ mm/s, rms; N-end: ______ mm/s, rms   

Running:  
- machine run OK  
- operation stops, why:   

Checking schedule and information

<table>
<thead>
<tr>
<th>Time</th>
<th>Bearing temperature</th>
<th>Bearing vibration levels</th>
<th>Stator</th>
<th>Stator winding temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>h:min</td>
<td>℃</td>
<td>℃</td>
<td>mm/s</td>
<td>mm/s</td>
</tr>
<tr>
<td>0:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0:05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0:10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0:15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0:20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

Observations:
### 8 Test run (with load)

**Checking schedule and information**

<table>
<thead>
<tr>
<th>Time</th>
<th>Load</th>
<th>Bearing temp.</th>
<th>Bearing vibration levels</th>
<th>Stator</th>
<th>Stator winding temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>D-end</td>
<td>N-end</td>
<td>D-end</td>
<td>N-end</td>
</tr>
<tr>
<td>h:00</td>
<td>%</td>
<td>°C</td>
<td>°C</td>
<td>mm/s</td>
<td>mm/s</td>
</tr>
</tbody>
</table>

Vibration spectrum attached: □ no □ yes, from: ____________________________

Acceleration time: __________ s.

Comments:
## 9 Machine approval

<table>
<thead>
<tr>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine approved for use</td>
<td>Date:</td>
</tr>
<tr>
<td>Commissioning done by:</td>
<td></td>
</tr>
<tr>
<td>Approved by:</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>June 2009</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Serial no.</td>
<td></td>
</tr>
<tr>
<td>ABB Ref.</td>
<td></td>
</tr>
<tr>
<td>Project:</td>
<td></td>
</tr>
</tbody>
</table>

**Fax Cover Sheet**

<table>
<thead>
<tr>
<th>Date:</th>
<th></th>
</tr>
</thead>
</table>
| To:   | ABB Tellhow Generators Ltd.  
       | Telefax: +86 791 835 0814 |
| From: |          |
| Fax number: |          |
| Phone number: |          |
| Email: |          |
| Number of Pages: | 1 + 9 + ________ |
| Message: |          |

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