

Inspection of Main Bearing to assess damage severity and replacement needs

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

• **Explanation**

[CIM 2509](#) have been created to handle issues with main bearings in V82 turbines. It is a complex case with several issues involved. It takes time to complete the RCA (root cause analysis) when many aspects need to be addressed.

While the RCA is under investigation it has been decided to do the following:

1. Reduce the alarm limit from 80°C to 65°C. This is done by rolling out [CIM 3030](#) which is a software update.
2. If alarm 118 is coming after the parameter change (Software update) in CIM3030, then main bearing must be inspected. If the visual inspection shows acceptable bearing condition, the alarm limit can be adjusted to 70°C to keep the turbine running while a new bearing is ordered. The bearing must be replaced.
3. When the new bearing is installed the alarm limit must be adjusted back to 65°C as default in the software update coming with CIM3030

The new software release driven by CIM3030 is expected to be released in April 2014.

Useful Instructions:

Perform Work Instruction [DMS 0003-9663](#) - Inspection of Grease-lubricated Main Bearing - V82/NM82.

If damage is found, categorize the main bearing according to [DMS 0000-2968](#) and instructions in SM131 [CIM Case 1479](#).

No action necessary

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

• **Explanation**

High temperature in the nacelle caused by high ambient temperature or other heat source.

Open the snap shot at the time of the alarm and observe the nacelle temperature. If ambient temperature is high then the cause of the high bearing temperature may just be the high ambient temperature.

Replace temperature sensor or TOI

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

• **Explanation**

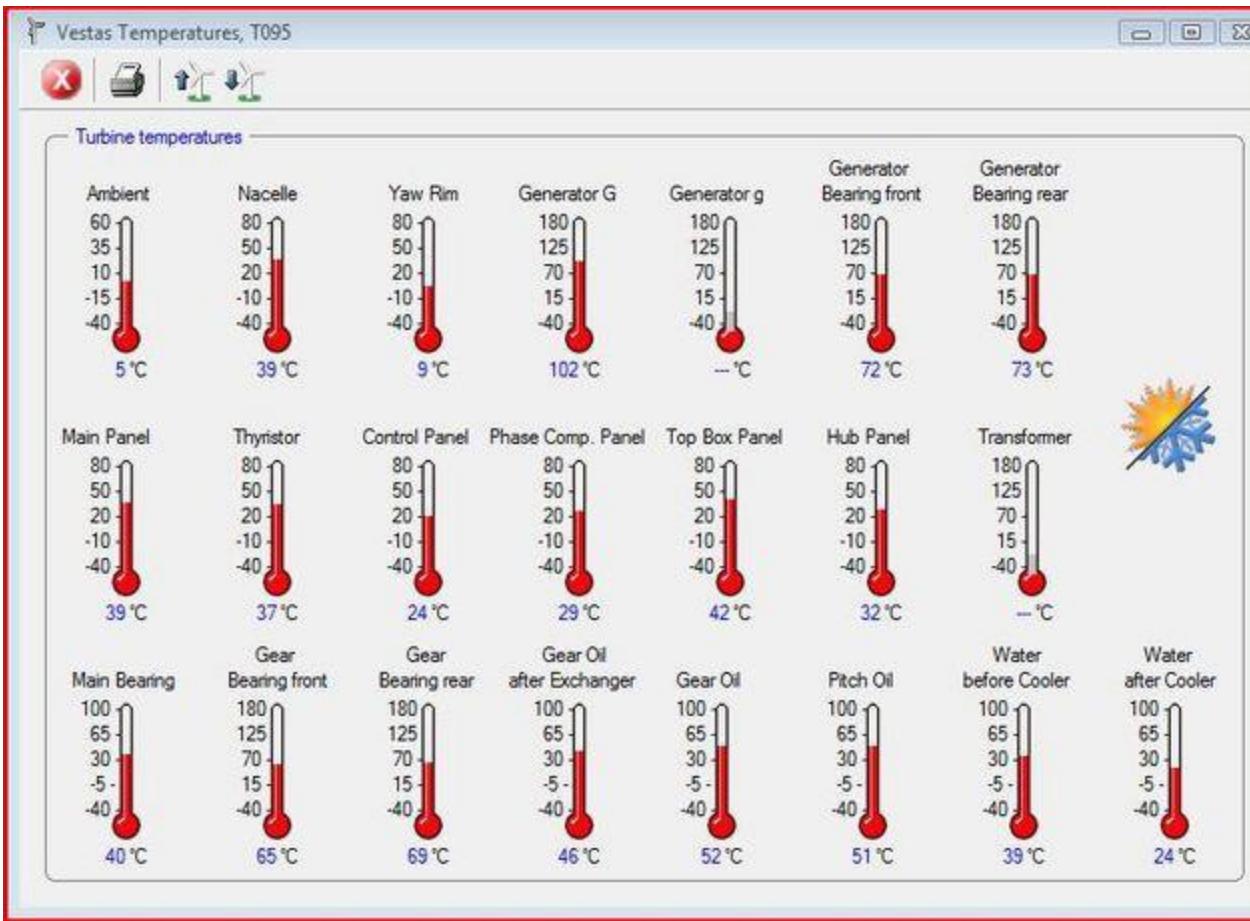
Check the temperature display on the TAC computer or in VOB. An open in the sensor or wire will cause a temperature of 205C to be displayed.

TAC Menu, T095

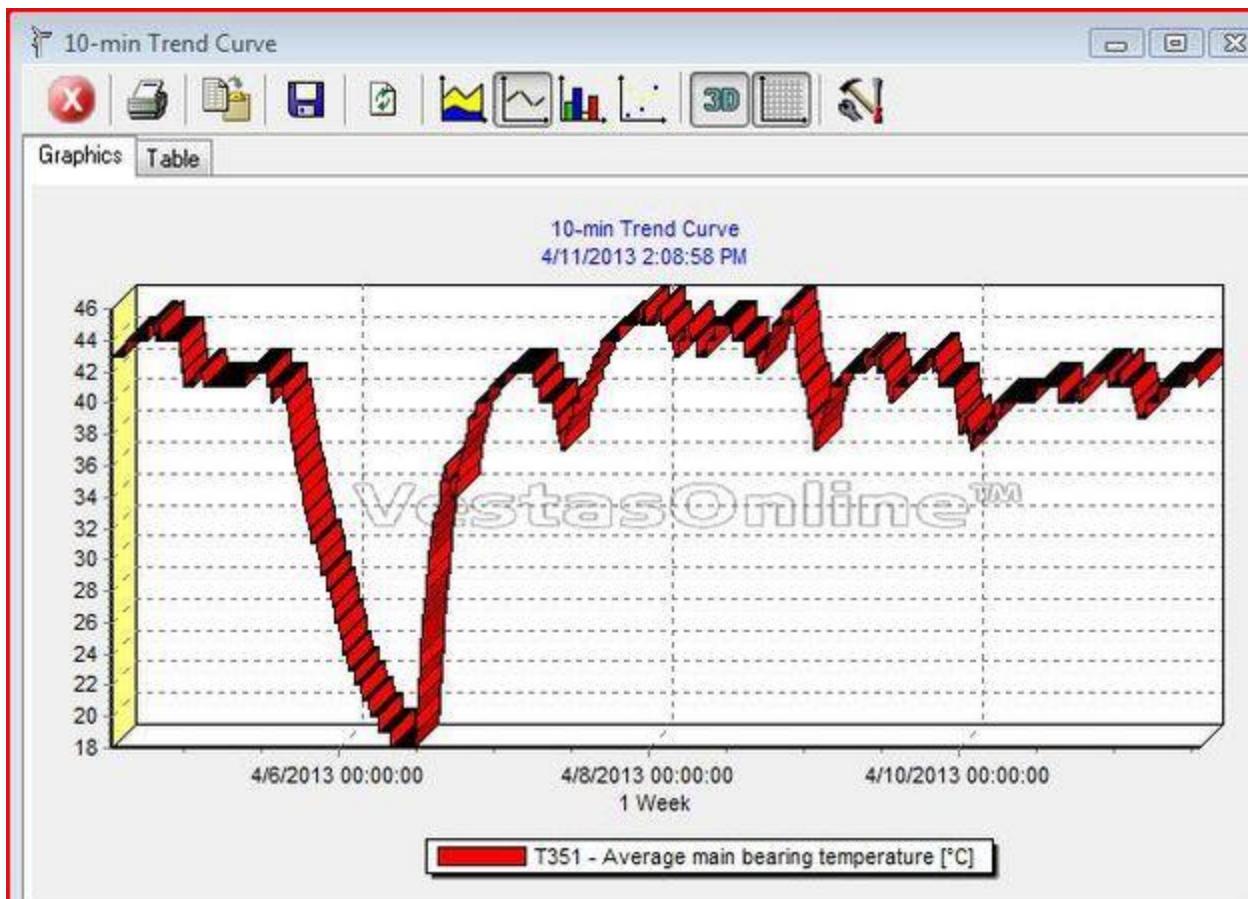


Generator bearing front temp.	72 °C
Generator bearing rear temp.	73 °C
Main bearing temperature	40 °C
Main bearing oil temperature	----- °C

7	8	9	RESET	START	STOP	◀	▶
4	5	6				▲	
1	2	3				◀	▶
CLEAR	0	,	.	PREV	▼	ENTER	

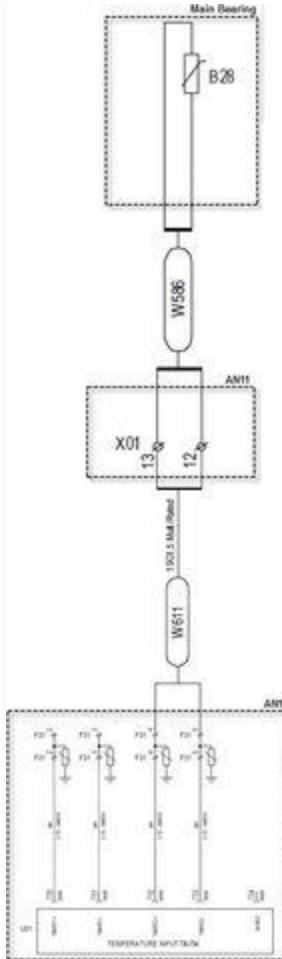


Also look at the average temperature values for the main bearing. A smooth change in temperature means that the pt100 is likely operating correctly while sudden spikes in temperature mean a defective pt100 or a loose connection in the circuit.



Check that the PT100 measurement is accurate.

1. If the sensor is suspected to be reading inaccurately, check the resistance of the PT100.
 - a. Disconnect the wires of the Pt100 sensor from terminals 12 & 13 in AN11.
 - b. Measure the resistance of the PT100 across the leads.
 - c. Using the PT100 Resistance-Temperature conversion chart, determine if the sensor is operating within range.
 - d. If the sensor is good, check for faulty connections in the rest of the circuit.
2. If connections are good and the PT100 is working then check the TOI.
 - a. Remove wires from TOI terminal 732 and 733 and switch them with another temperature input (e.g. 734 and 735).
 - b. Observe temperature with the wires in the new input. If it is the same as it was with the wires in 732 and 733 then the TOI is likely working.
 - c. If temperature is different, TOI is defective.



PT100 part number 60009279
 TOI part number 60015648

Replace/repair pump or make needed adjustments.

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

- **Explanation**

Check that the grease lubrication reservoir is not empty and that the drain container is not full.

Check the operation of the main bearing lubrication pump by following section 21 of SWI [DMS 1001948](#)