January 25, 2010

TO: JD Balle
Energy Alternatives

FROM: Michael Reed
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RE: Testing of Wattsun Trackers before shipping

JD,

Our serial numbers are applied to the finished product just before it ship out the door. The tracker controls, motors and finished drive are tested as follows:

SOLAR TRACKER CONTROLLER

Each circuit board and sensor are tested three times for proper functionality. They are manufactured "in house".

- When the board is built and prior to embedding in the NEMA chassis box
- After the board is embedded in the metal enclosure and all the connection wiring is completed.
- At the time it is mounted on the drive gear just prior to shipping.

AZIMUTH AND ELEVATION MOTORS

We purchase the motors and linear actuator ball screw form an American manufacturer – Venture Manufacturing, IL.

- Prior to assembly, we visually inspect the limit switch cams and electrically test each motor as we pull them from stock. This is a "no load test" to see if the motors draws more than 500 ma.

- Approximately one out of every ten motors undergoes a random check. We open up the "can" and visually inspect the armature, brushes and general interior appearance.

- Once the Azimuth motor is mounted gear drive the range of motion limit switches are set and tested five times. The motor is tested to see if it draws above 1 Amp.

- Similarly, the linear actuator limit switches are set and it is tested for normal operation. Typical current draw is less than 1 amp with no load. The actuators draw from 3 to 5 amps under normal operating conditions in the field. That is dependent on the angle of the array and any associated wind loading.

Any products that do not meet the test requirements are sent to our Quality Control Department for further analysis.

The testing was performed on your Wattsun Trackers.

Tracker Gear Drive SN:	Tracker Controller SN:
16200	15862
16201	15863
16202	15864
16203	15866
16204	15867
16205	15939
	15865

The 24 VDC tracker controller is fused on the circuit board with self-resetting over current fuses to protect the rotation and elevation motors. There is also a replaceable 7.5 amp fuse to protect the circuit board from shorts in either motor.

If you have any questions then please give me a call.

Thanks,

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