Initialization Procedures for the Solar Tracker

I. Purpose:

These procedures are designed for setting up the solar tracker after power is lost for greater than 24 hours. These procedures assume that the site parameters are already entered and saved in the solar tracker memory.

II. Cautions and Hazards:

- Unhook occultor arm from solar tracker secondary axis drive before powering up instrument.

- **PLEASE NOTE:** Serious damage can occur to the solar tracker and attached instruments if operated improperly.

III. Requirements:

- Laptop computer with a terminal emulation program and serial port capable of 9600 band, 8N1 communications.

- 8-pin serial port null modem cable.

- Do not run Brusag tracker without reading instructions first.

- An accurate watch to set the Brusag time.

- Location coordinates for site. These should already be input into the Brusag, but should be checked before initialization.

IV. Procedure:

A. Steps:

1. Hook up Laptop computer (with a terminal emulation display) to the powered-off Brusag.

2. Power-up laptop computer and Brusag solar tracker.

3. Set the communication parameters within your serial communication program to 9600 baud, 8-bit, no parity, one stop bit (8N1).

4. Dial up Brusag connection.

5. Type the letter "H." A help screen should appear on in the window.

6. Make sure that the occultor arm detached from solar tracker. Detach the two (2) screws which connect the arm to the elevation axis of the tracker. (Detach the shade arm by removing the three [3] screws holding the arm assembly to the top of the tracker.)

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7. Type "**MON**" and hit "**RETURN**" to enter monitor mode.

8. To run the initialization procedure, type the letter "I" (o not hit return). The Brusag may rotate at this point. This process may last about five (5) minutes. Be patient and wait until the window displays "**primary init done**" and "**secondary init done**."

9. Type any key to exit the "init" mode.

10. Type "**X**" to exit initialization mode.

11. Type "**H**" to see menu for current level. At this point, the Main Menu Level is displayed. [Show screen]

12. Type "**L**" to enter the clock menu.

13. Type "**T**" to enter correct time. Be sure to enter time in 24-hour GMT time (hhmmss).

14. Set the time to GMS time. Therefore, for SQL, the time is present time plus seven (7) hours, e.g., 1:00pm is "08:00:00" Z (GMS time).

15. Set date by typing "**D**." Enter the date in the following form: DD/MM/YY, e.g., "09/03/95" is March 9, 1995.

16. Type "**X**" to exit and return to main menu.

17. Type "**X**" again to exit the monitor driven program.

18. Type "**H**" to view the help menu.

19. Initialize the Brusag now by typing "**S**" then "**ENTER**" for "sun-seeking mode."

20. Exit the terminal emulation windows program.

21. Disconnect the "**comm**" connection.

22. Make sure all connections to the Brusag solar tracker are safely tucked away in a box to prevent environmental degradation.

23. Make sure that the radiometers on the Brusag, NIP, and cavity are all reattached properly.

24. Reconnect the solar occoltor(s) to the Brusag and ensure that it is covering the radiometer(s). *[This step may need to be expanded or made into a separate procedure.]*

25. Enter the start-time, end-time, and date on the checklist and also complete the site data log.

V. References:

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1. Brusag Inter Documentation 10-May-94 version 2.00.
2. Mike Rubes & Chris Cornwall discussions at SNL March 2, 1995.

VI. Attachments:

None.