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PIR Radiometer Desiccant Change Procedure

I. Purpose:

This document describes the methods used to replace desiccant in the PIR radiometers when the desiccant is no longer effective.

II. Cautions and Hazards:

- Exercise caution. Ventilators are powered by 12 VDC.
- It is easy to drop screws on the ground. Be careful and use a drop cloth under the stand.
- As soon as the desiccant chamber is opened, complete the entire procedure in as little time possible. The open chamber will allow moisture to enter the radiometer. Work quickly.

III. Requirements:

- Small funnel.
- Adjustable pliers (locking type) or Robo grips.
- Small tray or cup to hold screws.
- Putty-for cabling.
- Desiccant.
- Spare o-rings.
- Clean tarp or drop cloth.

IV. Procedure:

A. Steps:

1. Check desiccant window to see if desiccant needs changing. If not, cancel this procedure. **Note:** The desiccant will appear blue when dry and clear and pinkish when saturated.
2. Spread a clean tarp or large cloth under the PIR radiometer stand.
3. If necessary, prepare new, dry desiccant according to step #1: dry the desiccant in an oven at 135° C for 3 hours.
4. Remove the 25cm diameter shield. There are 3 screws to remove. Use the small tray to hold the screws. (This applies to the SKYRAD PIR only; not the GNDRAD PIR.)
5. Turn the desiccant cap (located on the PIR) counter-clockwise and remove the cap and 4cm long tube. The locking pliers or Robo grips can be used to

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loosen desiccant cap. **Note:** The desiccant cap is fragile, do not excessively tighten the cap, squeeze it too tightly with the locking pliers, or grind loose desiccant into the grooves in desiccant chamber.

6. Pull the 4-cm-long desiccant tube off of the desiccant cap.
7. Remove the pink (saturated) desiccant from inside the tube and place it in a storage container. With the small funnel, add the new, dry desiccant (blue color) to the desiccant tube. **Note:** Save the used desiccant in a jar/plastic bag for later use; it can be reused.
8. Check the O-ring on the desiccant cap. Does the O-ring look worn? Replace if necessary; apply sealing grease to O-ring if necessary.
9. Attach desiccant tube to desiccant cap.
10. With a small flat head screw driver, remove any loose pieces of desiccant from desiccant chamber of instrument.
11. Re-attach the desiccant container to the radiometer. Desiccant cap should turn several times before becoming tight. If it only turns a partial turn, it may be cross-threaded.
12. If desiccant requires changing within a couple of days, recheck the seal of desiccant cap on the PSP/PIR. It is possible that the cap was not sealed correctly, or that the o-ring on the cap needs to be replaced.
13. On the checklist, record that change was completed.
14. Enter the date, start time and end time of procedure, and any comments of the desiccant change in the Site Daily Log.

V. References:

None.

VI. Attachments:

None.