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Gravity Probe B Relativity Mission

CLEAN ROOM JANITORIAL PROCEDURE

GP-B P0040 Rev A

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CLEAN ROOM JANITORIAL PROCEDURE

I OVERVIEW OF JANITORIAL PROCEDURES

A. Purpose

Clean room areas such as those used by GP-B require regular maintenance and cleaning in order to keep their usefulness for the daily operations. Collection of dirt and particulate matter on surfaces over time is a fundamental fact of life, and only constant work, vigilance, and attention to detail can reverse this trend. Even then, it is not guaranteed. The following policy outline has been formed to set a minimal standard for the routine maintenance of the clean room areas.

II GENERAL INFORMATION

A person entering the clean room for janitorial work is subject to the same restrictions applied to all other clean room operations. Clean room garments are required per established procedures (see P0034 and P0035). No carts, trash containers, mops, brooms or other supplies shall be brought into the clean room unless these items have been specifically designed and prepared for clean room use. Any major cleaning operation shall take place at the end of the work day, or at the end of the work week in the case of operations such as floor scrubbing that generate large quantities of particulate matter. Consultation with clean room supervisory personnel may be required in some instances where it is determined that the room recovery rate might be unacceptable to proposed operations requiring very high cleanliness standards. The clean room supervisory personnel are responsible to initiate this consultation, to allow the maintenance work to be completed by non-technical persons who have received minimal instruction in clean room procedures. All maintenance personnel are required to undergo the basic training in clean room operations defined by the clean room committee prior to beginning their maintenance work.

III CLEANING SOLUTIONS AND OTHER MATERIALS

A. Isopropyl alcohol

Warning: Flammable liquid. Vapors may be harmful. Use only with adequate ventilation.

Isopropyl alcohol is to be used where soap/detergent solutions cannot be tolerated, i.e. near or on delicate equipment. These items should not be wiped down without prior approval, and only with extreme care. Surfaces of electronic equipment cabinets may be wiped down, taking care not to disturb cabling, "controls," or experimental set-ups. If in doubt, it should be left alone.

B. Floor solutions

Approved cleaning solution is FLOORCLEAN @, EKC Burmar, Dryden Engineering.

For floor cleaning: mix four (4) ounces per gallon of D. I. Water.

For heavier cleaning: mix five (5) to eight (8) ounces per gallon of D. I. water.

Immediately rinse with D. I. water.

A foam (nonfiber) mop is to be used.

C. Other cleaning solutions

LABCLEAN @: EKC Burmar, Dryden Engineering

Spray on surface to be cleaned.

Let set 5-10 seconds. Wipe clean.

D. Cleaning wiper

Dust Magnet @, Clean room products

Crew @ Clean room products. PVA foam sponge, VWR #21923-606

E. Equipment

1) Vacuum-HEPA filtered NILFISK Model GS-80 or equivalent

2) Mop-Stainless steel and foam Clean Room Products Model F7114

3) Scrub pad-Scotchbrite

IV SCHEDULE OF OPERATIONS FOR JANITORIAL PROCEDURE**A. Daily****1) Anteroom cleaning**

Empty waste container to nearest dumpster.

Wipe down cabinets, tables, and window ledges with damp towel/sponge or "sticky towels" made for this purpose. (Cleaning solutions are described elsewhere in this document.)

Vacuum the floor and fiber mat.

Damp mop floor with water and cleaning solution, and allow to dry.

2) Sticky mat

On the gowned side should be changed whenever contamination is visible on the mat.

On the street side should be changed when no clean area is still available.

3) Trash removal

Empty trash containers from clean room areas to nearest dumpster.

Pick up any loose "trash" such as used wipes, being careful not to disturb any experimental set-ups.

4) Surface wipedown

Wipe down surfaces of benches, outside and on top of cabinets with damp cloth or "sticky cloth."

B. Weekly**1) Anteroom wipedown**

Once a week, clean anteroom thoroughly, wiping down all exposed surfaces with damp cloth or "sticky cloth," vacuum floors and rug.

- 2) **Removal of old garments**
On Friday afternoon, remove all used garments from cabinet and throw away.
- 3) **Inventory of clean room janitorial supplies**
Check that there is an ample supply of cleaning supplies, wipes, sponges, and other items as necessary. Re-order or notify clean room supervisory personnel if there is less than a two-month stock.
- 4) **Cleaning supplies replacement**
Wipes and mop heads which show dirt, fungus or mildew after rinsing should be replaced. Sponges and wipes which are shedding visible particles should also be replaced. **Be sure to use germicide in cleaning solutions.**
- 5) **Floor cleaning**
Damp mop floor with cleaning solution and water, allow to dry.

C. Monthly

- 1) **A complete wipedown**
Once a month, do a more intensive cleaning including tops, bottoms and underneath cabinets, benches and utility racks. Hand scrubbing of dirty work surfaces/floors with abrasive pads and cleaning solution primarily to remove scuff marks or other material which is too stubborn to be removed by the normal daily/weekly wipedowns. The clean room would be closed for this cleaning, with proper advanced notification given.
- 2) **Inspection of air handling facilities**
Inspect air handling facilities and report any anomalies. Check whether pressure readings inside rooms are within acceptable limits, and if not, report to clean room supervisory personnel.

D. As required

- 1) **Floor stripping and rewaxing**
Once every twelve months, or as required, strip floors using abrasive pads and stripping solution. This will most likely involve a floor scrubbing machine, and will be scheduled for times during which no critical processes will be developed on the order of a week (subject to clean room committee decision). Rewax in three separate coats, allowing to dry between successive coats. Use wax formulated for clean room use, such COMPLETE @ or COMPARE @. Hand scrub where floor cleaning machine is unable to reach, or near delicate electronic equipment.
- 2) **Annual cleaning**
The clean room would be closed for this cleaning, with proper advanced notification given. Cleaning would require climbing ladders to allow hand wipedown of the exposed surfaces as well as inside and outside of all the light fixtures and replacement of fluorescent lights. Also damp clean vents, pipes, conduits, ducts, tubing, drop curtains, windows, tables, work benches, carts, chairs, ledges, moldings, doors, door frames shelves, exterior of equipment and machines. Annual cleaning should be done by outside clean room janitorial service.

E. Inspection method for annual and monthly cleaning

The effectiveness of cleaning should be inspected by clean room manager or his delegate after each monthly cleaning and annual outside janitorial service. Inspection can be done by "white glove" wipe test.