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1.0 PURPOSE & SCOPE

Purpose: This procedure describes the approved procedure for operation of the *Portacount™ Plus* fit test apparatus and defines its role in the IH Group's **Quantitative Fit Test (QNFT)** Program. This SOP is used in conjunction with *IH72300 Respiratory Fit Testing-QNFT Program Policy & and Principles*.

2.0 RESPONSIBILITIES

- 2.1 This program is implemented through the SHSD Industrial Hygiene Group Leader and the *Respiratory Protection Program Administrator (RPPA)*. Members of the SHSD Industrial Hygiene Group and other BNL organizations, with qualifications in accordance with Section 4 of this procedure, can operate the *Portacount™ Plus*.
- 2.2 It is the responsibility of persons conducting testing to comply with all provisions in the Respiratory Protection Program Procedure IH72100 and IH72200. It is the responsibility of persons conducting testing to document results of the testing in compliance with these SOPs.
- 2.3 The IH Group shall maintain the equipment used in this procedure.

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3.0 DEFINITIONS see also IH72200

- 3.1 *Portacount™ Plus*: A QNFT apparatus manufactured by TSI® Inc. utilizing the particulates found in ambient air as the challenge medium. Quantification is by optical density measurement using condensation nucleus counting technology. The instrument specifications include detection of particles as small as 0.02 µm in a range of 0.1 to 5 x 10⁵ particles/cm³.

4.0 PREREQUISITES

- 4.1 **Calibration of equipment:** Test equipment used in this program will be calibrated on an annual basis by the manufacturer of equipment, or by an equivalent, independent calibration service provider. The IH Group will maintain records of calibration for a minimum of three years.

5.0 PRECAUTIONS

- 5.1 See IH72200 for generic precautions of fit testing that are not specific to the *Portacount Plus*.
- 5.2 **Hazard Determination:** The operation of fit test equipment does not cause exposure to any chemical, physical, or radiological hazards. The equipment does not generate Hazardous Waste. Personal protective equipment is not required.

6.0 PROCEDURE

- 6.1 **Equipment:**
- 6.1.1 TSI® Portacount™ Plus Respirator Fit Tester, or equivalent.
 - 6.1.2 Appropriate respirators- probed for fit testing.
 - 6.1.3 HEPA filter cartridges for above respirators.
 - 6.1.4 Authorization Cards, laminating pouches (GBC 3202105 from Corporate Express).

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- 6.2 Conduct **Pre-Test Qualification, Screening of fit test subjects, Subject Instruction, Selection of masks, Leak Checks, Familiarization Period and Face piece set-up:** See IH72200. Make sure the mask to be used is fully assembled with all parts present and not damaged.

Important: Have the employee put on the mask now to begin the familiarization period. Observe the donning of the mask and advise correct donning procedures if there is poor technique. Instruct the employee to conduct the positive and negative fit checks as permitted by the design of the mask.

- 6.3 **Assemble the Alcohol Chamber into the Portacount™ Plus apparatus.** If alcohol is not seen in the clear plastic chamber then the wick may be dry. Consult the owner's manual on filling the chamber. Turn on the Portacount Plus now by pressing the [ON/OFF] button on the membrane pad.

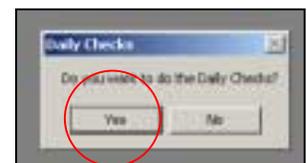
Chamber
Wick
ON/OFF



- 6.4 **Start Up:** Initiate the start of the computer program by clicking on the *Fit Test Plus (Fpwin)* icon on the system desktop.



- 6.5 **Daily Check:** Answer [**Yes**] to the “Do you want to do the Daily Check?” The apparatus will conduct a self-test of the system. Follow the instruction for completing the daily check.

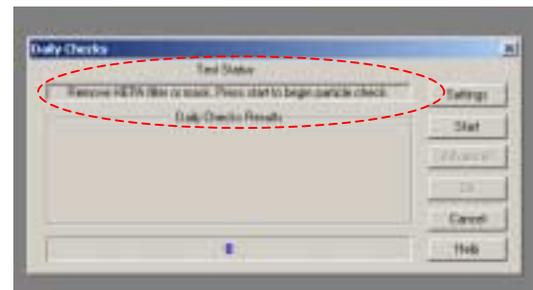
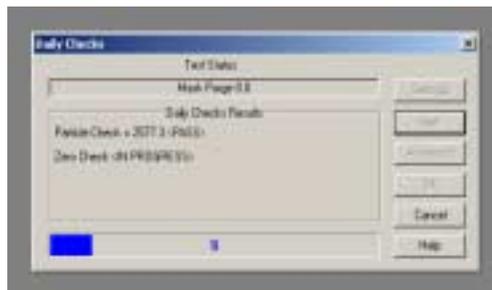


- 6.6 During the Daily Check, the *Fit Test Plus (Fpwin)* program will request the Portacount Serial Number. It will then instruct you to remove any filter or mask. Press [**Start**] to begin the daily check. An automatic cycle will begin. The screens involved in the daily check cycle are listed below. After the purge and ambient particle check has been successfully completed (PASS), attach the HEPA filter when prompted to conduct the zero check.

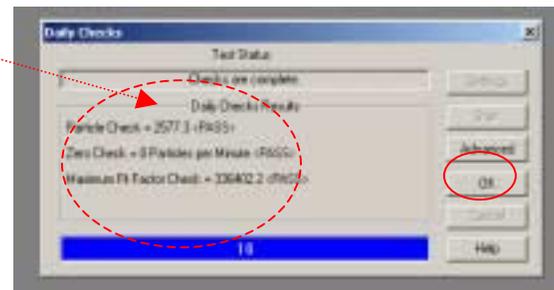


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6.7 At the end of the Daily Check, verify that the Status is <PASS>. Typical particle check values are 2000 – 4000. Value better than 4000 are good and may be seen if the unit has been on for over 30 minutes before testing. Then press [OK].



6.8 Attach the fit test apparatus clear tubing line to the filter adapter (pass through) on the mask to be tested.

Location to attach the fit tester sample line (clear line on the fit tester)

ADAPTER

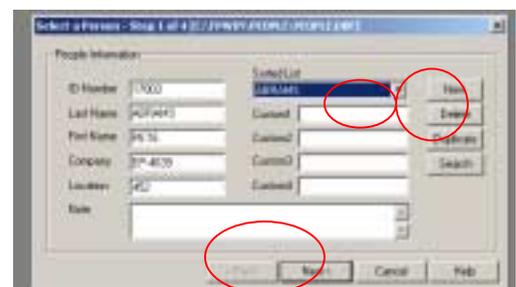


6.9 Enter the name of the person to be fit tested.

6.9.1 Start by searching for the name from those already listed. Click the “down arrow” key next to Sorted List” to find the name.

6.9.2 If it not in the list, press [NEW] to add the information about the person into the database.

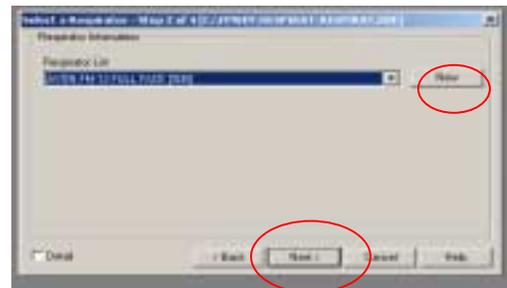
6.9.3 After the correct name is found, press [NEXT].



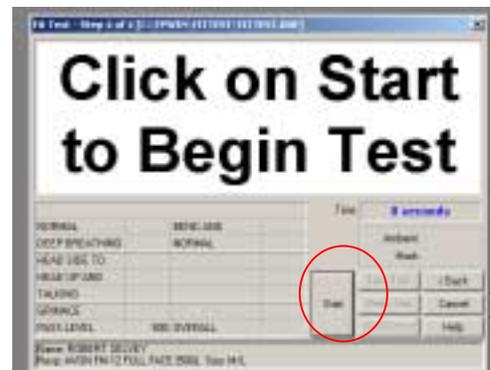
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6.10 Select the respirator to be fit tested from the pull down list. After the correct type is found, press [NEXT].



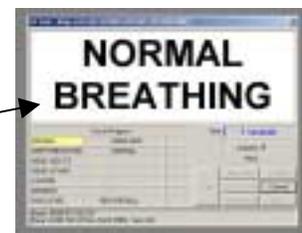
6.11 When the employee states they are ready, press [Next]. Then press [Start].



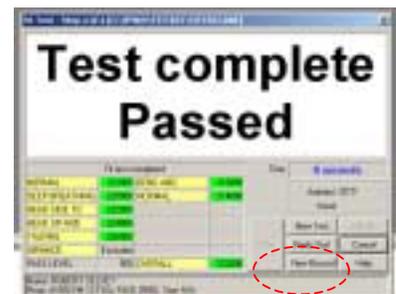
6.12 The fit test apparatus will automatically prompt the worker to conduct the **Fit Test Exercise regimen**. Have the worker complete a regimen of exercises that at the minimum include sixty seconds of the following exercises:

- Normal breathing
- Deep breathing
- Side to side head movement
- Up and down head movement
- Talking-
- Grimace- smiling or frowning (15 seconds only)
- Bending over
- Normal breathing

One of the exercise screens



6.13 At the end of the test, the status PASS or FAIL will be determined by the *Portacount™ Plus*. Press [View Record] to verify all information is correct and go to the



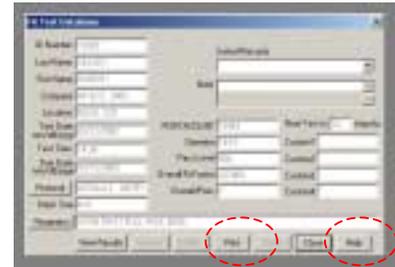
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print screen.

6.14 Press **[Print]** to get a hardcopy of the test results, i.e. the *Portacount Fit Test Report* (see attachment 8.1). Show it to the person fit tested and explain the results. Sign the hardcopy and have the employee sign the hardcopy.

6.15 After following the print cue to the appropriate print, press **[Close]**. The data will be saved.



6.16 **Documentation:** Follow all steps in IH72200. This includes:

- 6.16.1 Complete a *BNL F2287A, Respirator Authorization Card*, laminate, and give it to the worker.
- 6.16.2 Complete the record of the testing (*Fit Test Completion Record*) form contained in Attachment 8.4 of SOP IH72300, copy, and send or fax to the BNL TRAINING AND QUALIFICATION PROGRAM OFFICE.
- 6.16.3 File the *Portacount Test Report* (see Attachment 8.1) record under the employee's name in the Fit Test Office files.

7.0 IMPLEMENTATION & TRAINING

7.1 **Fit Testers Qualifications:** Only persons with current qualification can perform the role of *Fit Tester* in this program.

7.1.1 For SHSD personnel, the IH Group Leader or Respiratory Protection Program Administrator shall qualify persons to perform testing with this equipment under the provisions of the IH72200 program. Qualification will include observation of using the *Portacount™ Plus* apparatus.

7.2 For non-SHSD personnel conducting fit testing, the *Fit Tester's* line management shall establish qualification criteria that are compliant with ANSI and OSHA drivers and shall qualify persons to perform fit testing under this program.

8.0 REFERENCES

8.1 TSI Portacount Plus Operation Manual.

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9.0 ATTACHMENTS

9.1 Sample of Printed Documentation of Fit Test Record

10.0 DOCUMENTATION

Document Review Tracking Sheet		
Prepared By: <i>(signature/date on file)</i> R. Selvey 04/05/02 Certified Industrial Hygienist	Reviewed By / Date: <i>(signature/date on file)</i> D. Wadman 04/08/02 SHSD respirator Fit Tester Lead	Approved By / Date: <i>(signature/date on file)</i> R. Selvey 04/08/02 Industrial Hygienist Group Leader
Filing Code: IH52QR.01	QA Review / Date:	Effective Date: 04/19/02

Periodic Review Record (3 year cycle)		
Date of Review	Reviewer Signature and Date	Comments Attached
4/10/02	<i>(signature/date on file)</i> R. Selvey	Minor corrections. Step 6.3 revised to indicate "turn on" meter.
4/19/02	<i>(signature/date on file)</i> R. Selvey	Add Section 7 training format

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Attachment 9.1

Sample of Printed Documentation of *Portacount™ Plus* *Fit Test Record*

03/12/2002

LAST NAME GA [REDACTED]
 FIRST NAME MI [REDACTED]

FIT TEST REPORT
 Fit test information

ID NUMBER 22 [REDACTED]
 LAST NAME G [REDACTED] CUSTOM1
 FIRST NAME M [REDACTED] CUSTOM2
 COMPANY SHSD CUSTOM3
 LOCATION BLDG 902A/8236 CUSTOM4
 NOTE

TEST DATE 03/12/2002 PORTACOUNT S/N 15463
 TEST TIME 13:53 N95 COMPANION N
 DUE DATE 03/12/2003

RESPIRATOR PROTOCOL DEFAULT 29CFR1910.134
 MANUFACTURER CAIRNS PASS LEVEL 1000
 MODEL SCBA
 MASK STYLE FULL FACE
 MASK SIZE MED/LARGE
 APPROVAL
 EFF. < 99% N

EXERCISE	DURATION (SEC)	FIT FACTOR	PASS
NORMAL BREATHING	60	19100	Y
DEEP BREATHING	60	3540	Y
HEAD SIDE TO SIDE	60	18100	Y
HEAD UP AND DOWN	60	15700	Y
TALKING	60	1970	Y
GRIMACE	10	Excl.	X
BEND AND TOUCH TOES	60	2080	Y
NORMAL BREATHING	60	23400	Y

OVERALL FF 4720 Y

FIT TEST OPERATOR [REDACTED] DATE 3/12/02
 NAME MIKE [REDACTED] DATE 3/12/02