

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division	NUMBER IH72250
	REVISION Final Rev1
INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure	DATE 02/21/08
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Subject: RESPIRATORY PROTECTION PROGRAM Respirators Cleaning & Maintenance Program	

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1.0 PURPOSE & SCOPE

Purpose: This procedure describes the program to be followed for cleaning respirator face pieces after uses by workers and after drills, training and fit testing. This SOP provides details of the BNL program not listed in other written program documentation. This SOP compliments and does not override policy stated the BNL SBMS Subject Area *Respiratory Protection*.

Scope: The SOP defines policy to meet DOE, OSHA and ANSI regulatory requirements and to meet collective bargaining agreements at BNL. This SOP describes the policy for cleaning of respiratory protective equipment that has been exposed to chemical or radiological contaminants and personal sanitization and the sanitization of potential biological hazards from the exhaled air of the previous wearer.

2.0 RESPONSIBILITIES

- 2.1 The Respiratory Protection Program is implemented through the SHSD Industrial Hygiene's *Respiratory Protection Program Administrator (RPPA)*.
- 2.2 Members of several BNL organizations are involved with the selection, issuance, use, and cleaning of face pieces. It is the responsibility of persons in service providing roles in selection and issuance of the respiratory protection program to abide by the program described in this SOP.

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3.0 DEFINITIONS

Cleaning is the multiple level process of ensuring the safety of respiratory protection equipment from the presence of harmful agents within the equipment. It includes *decontamination, sanitization, and mask hygiene* steps to:

- Remove hazardous contamination arising from use in hazardous circumstances,
- Eliminate potentially pathogenic microorganism arising from wearing of facepieces by workers,
- Eliminate body residues from equipment arising from use by workers.

Decontamination: The removal of radiological or chemical hazards from the outer surfaces of respiratory protection equipment after use. This is done with specific work place controls and specialized equipment and techniques.

Mask hygiene: The removal of breath condensation and skin oils from the interior of a mask by the user of respiratory protection equipment in preparation for storage pending the next use by the same individual. This is done with a disinfecting wipe pad or hand washing with dish detergent/hand soap and water. This does not reach the level of cleanliness achieved in *sanitization* and is not sufficient *cleaning* of equipment for the transfer of the equipment to a different individual.

Sanitization: The removal of **harmful** microorganisms from the interior surfaces of respiratory protection equipment after use prior to use of the equipment by another individual. *Sanitization* is done to eliminate the transfer of illness causing microorganisms from one respirator user to the next user. This is done with a disinfecting solution in **proper** cleaning equipment.

Repair and Maintenance: The replacement of parts of respiratory protective equipment. These actions must follow manufacturer's recommendations by **persons** who have the manufacturer's recommended level of qualification/certification.

4.0 PREREQUISITES none

5.0 PRECAUTIONS

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5.1 Hazard Determination:

- The *decontamination* of contaminated respiratory protection equipment can cause exposure to a physical or radiological hazard. Wastewater may be a Hazardous Waste.
- The *sanitizing* of respirators can cause exposure to cleaning disinfectant chemicals that may pose a mild hazard. The cleaning solutions may be hazardous (mildly corrosive or irritating) from eye contact or ingestion of the concentrated liquid. The wash solutions from sanitization **do not meet the designation of hazardous** and rinse can be released to the sink.

5.2 Practices to be avoided during cleaning (unless allowed in manufacturer's cleaning recommendations):

- Do not use chlorine bleach on facepieces.
- Do not use isopropyl alcohol on the inside sight surfaces.
- Never use abrasives or abrasive pads on the mask parts.
- Do not use a cloth or sponge to dry the inside of the mask.

6.0 PROCEDURE

6.1 Determine the *issuance pattern* of the equipment:

- Mask permanently assigned to the worker (**such as in** Emergency Services Fire Rescue personnel and Safeguard and Security Patrol Officers)
- Mask assigned to the user for a limited period of time, after which the equipment is returned for decontamination and sanitizing (bulk of issuance at BNL).
- Mask used temporarily for **special purposes** (such as fit testing or training).

6.2 **Masks are cleaned by** BNL organizations collective bargaining unit **members**, if any, who has historically conducted the cleaning for the MASKS type and issuance pattern (**see Step 6.1**). The following is the cleaning history with respect to collective bargaining units (CBU):

- *Environmental & Waste Management Division (EWMSD)* CBU personnel **clean APR and PAPR with chemical and radiological contamination** from all organizations.
- *Emergency Services Division* CBU personnel clean their own individually assigned SCBA units for non-radiological contaminated masks. Radiological contaminated SCBA masks are survey by *Radiological Control Division (RCD)* and a decision on disposal or reuse is made.

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- *Safeguards and Security Division* CBU personnel clean their own individually assigned *Avon Military Masks* for non-radiological contamination. Radiological contaminated *Avon Military Masks* are survey by *RCD* and a decision on disposal or reuse is made.
- *SHSD* and *Office of Training & Qualification Programs* masks used temporarily for fit tests and training are *sanitized* under the *SHSD* fit test procedure IH72450.

6.3 Organizations that conduct *decontamination* or *sanitization* follow standard operating procedures for the cleaning processes used based on the following:

- If an organization's respirator use results in chemical or radiological contamination above acceptable limits the unit must be *decontaminated*.
- When an organization's equipment is transferred from one individual to another, the equipment must be *sanitized*.
- When an organization's equipment is used by individuals for training, periodic familiarization, or a use that does not result in chemical or radiological contamination, the user of the mask conducts *mask hygiene measures* in preparation for storage prior to that same user's next use of the equipment.
- When the organization's equipment requires *repair and maintenance*, the equipment must be serviced by a manufacturer's approved vendor or the Environmental and Waste Management Services Division facility (if they are qualified on that brand of equipment.)

7.0 IMPLEMENTATION & TRAINING

7.1 Only organizations whose cleaning program meets the provision of the [OSHA and ANSI Standards](#) and the SBMS Subject Area *Respiratory Protection* should conduct *decontamination* or *sanitization*.

7.2 The qualification to perform the role of equipment *decontamination* or *sanitization* is determined and approved by the line organization based on the equipment manufacturer's recommendation.

8.0 REFERENCES

8.1 NIOSH *Suggested Respirator Cleaning and Sanitation Procedure* from CDC NIOSH Web Site.

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9.0 ATTACHMENTS

none

10.0 DOCUMENTATION

Document Development and Revision Control Tracking		
Prepared By: <i>(signature/date on file)</i> R. Selvey 01/06/06 Certified Industrial Hygienist	Reviewed By / Date: <i>(signature/date on file)</i> F. Horn 01/07/05 ESHQ WOSH Committee Chair	Approved By / Date: <i>(signature/date on file)</i> R. Selvey 01/13/05 Industrial Hygienist Group Leader
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