

September 30, 2003

Attachment C

Guidelines for Identification of Test Configurations for Exposure to GB/HD **And Part Number Change Guidelines**

Guidelines for Identification of Test Configurations for Exposure to GB/HD

Guidelines for determining respirator configurations that need to be tested for agent resistance in accordance with sarin (GB) and mustard (HD) agent test provisions of the Statement of Standard for Chemical, Biological, Radiological and Nuclear (CBRN) Air-Purifying Escape Respirator and the Statement of Standard for Chemical, Biological, Radiological and Nuclear (CBRN) Self-Contained Escape Respirator are:

- A. Unique parts, components and/or materials that form a pressure boundary between the breathing gas and the ambient environment need to be tested. For respirators that use a neck dam, if the neck dam is visible after the respirator has been properly mounted on the SMARTMAN apparatus during testing, the neck dam will be challenged with liquid HD exposure.
- B. Unique parts, components and/or materials that have a direct effect on the ability of the respirator to provide respiratory protection, such as a facepiece head-harness, need to be tested.

Warfare agents, sarin (GB) and distilled sulfur mustard (HD), are aggressive penetrating and permeating substances. In order to ensure the integrity of the respirator is maintained during and after exposure to these agents, all parts that form a boundary between the breathing gas and ambient conditions need to be tested. Pressure boundary parts identical in configuration but made from different materials need to be individually tested as separate respirator configurations. For example, the same facepiece made from two different materials, natural rubber and EPDM, must be tested as separate respirator configurations.

Test agents can also attack materials causing them to deteriorate and fail. A facepiece headharness that fails during use could affect the user to facepiece seal. Consequently, head harnesses manufactured from different materials must be individually tested as separate respirator configurations.

Part Number Change Guidelines:

Design changes to components or parts that have a direct effect on the ability of the respirator to provide respiratory protection need to be evaluated to determine the need for a part number change. The evaluation needs to consider the forward and backward compatibility of the part or component both before and after the design change. If the part or component is not forward and backward compatible before and after the change, a new part number is required for the part or component and the NIOSH approved subassembly in which it is used.