



Billing Code 4163-19-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[Docket No. CDC-2018-0093; NIOSH-320]

**Self-Contained Breathing Apparatus Compressed Breathing Gas Containers;
Request for Information**

AGENCY: Centers for Disease Control and Prevention, HHS.

ACTION: Request for information.

SUMMARY: In October 2017, the Department of Transportation (DOT) issued a special permit to the Digital Wave Corporation, allowing the company to extend the service life of certain carbon-fiber reinforced aluminum-lined cylinders. Some stakeholders, including respirator and cylinder manufacturers, have expressed concern to the National Institute for Occupational Safety and Health (NIOSH), within the Centers for Disease Control and Prevention, about the safety of cylinders extended beyond the manufacturers' stated service life. NIOSH is seeking information about the potential effect of the special permit, as it may relate to the safety of self-contained breathing apparatus respirators approved by NIOSH for use in U.S. workplaces.

DATES: Comments must be received by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: *Written comments:* You may submit comments by any of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments to the docket.

- Mail: NIOSH Docket Office, Robert A. Taft Laboratories, MS-C34, 1090 Tusculum Avenue, Cincinnati, OH 45226.

Instructions: All submissions received must include the agency name (Centers for Disease Control and Prevention, HHS) and docket number (CDC-2018-0093; NIOSH-320) for this action. All relevant comments, including any personal information provided, will be posted without change to <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Jeffrey Peterson, NIOSH National Personal Protective Technology Laboratory, 626 Cochrans Mill Road, Pittsburgh, PA 15236; 1-888-654-2294 (this is a toll-free number); PPEconcerns@cdc.gov.

SUPPLEMENTARY INFORMATION:

The Department of Transportation approves certain carbon-fiber reinforced aluminum-lined cylinders (hereinafter “DOT-CFFC”), which are commonly used to provide breathing air in the self-contained breathing apparatus (SCBA) respirators typically carried by firefighters and other industrial workers to protect them in atmospheres immediately dangerous to life and health. Currently, all DOT-CFFC approved cylinders that are a sub-component of NIOSH-approved SCBA have a service life of 15 years; DOT regulations require “requalification” every 5 years to ensure that each cylinder can hold its rated pressure for the duration of the 15-year service life.

In October 2017, the DOT Pipeline and Hazardous Materials Safety Administration issued special permit, DOT-SP 16320 (Third Revision), to Digital Wave Corporation of Centennial, CO.¹ Digital Wave Corporation manufactures ultrasonic examination cylinder testing equipment, modal acoustic emission testing equipment, and

¹ DOT Pipeline and Hazardous Materials Safety Administration, DOT-SP 16320, <https://www.phmsa.dot.gov/approvals-and-permits/hazmat/file-serve/offer/SP16320.pdf/offerserver/SP16320>.

provides associated inspection services, including the requalification of carbon-fiber reinforced aluminum-lined cylinders. Pursuant to DOT-SP 16320, modal acoustic emission requalification testing allows DOT-CFFC cylinders to be authorized for use for 5 years after the original 15-year service life; cylinders could be requalified three times beyond the original 15-year service life, for a total service life of 30 years.

Modal acoustic emission testing is an advanced, non-destructive evaluation of carbon-fiber reinforced aluminum-lined cylinders that detects structural damage which can compromise burst pressure strength in a composite overwrapped pressure vessel. The modal acoustic emission waveforms can be used to identify damage such as fiber breakage and delamination. Some stakeholders have expressed concerns regarding potential cylinder failure when the service life is extended past the service life identified on the original special permit. Since DOT-SP 16320 was issued, more than 3,500 carbon-fiber reinforced aluminum-lined cylinders have been requalified beyond their original 15-year service life using the modal acoustic emission method.

NIOSH has published guidance advising SCBA users who may be concerned about using modal acoustic emission-requalified cylinders as part of their NIOSH-approved SCBA configuration to review the user instructions, supplemental informational inserts, safety precautions, and SCBA warranty information provided by the NIOSH approval holder.² The guidance further encourages approval holders to provide respiratory protection program administrators and SCBA users with current recommendations regarding the DOT-SP 16320 requalification method with regard to service life limitations or other relevant matters.

² <https://www.cdc.gov/niosh/nppt/resources/pressrel/letters/respprotect/CA-2018-1006.html>.

NIOSH seeks to better understand the use of modal acoustic emission testing to requalify DOT-CFFC cylinders beyond the original 15-year service life, as permitted by DOT-SP 16320, as well as the safety and health concerns of users in industrial settings, including the fire service and first responders. Accordingly, NIOSH is seeking data and information from all interested stakeholders in response to the following questions:

1. Are users of DOT-CFFC cylinders that have been requalified for service life beyond 15 years, pursuant to the provisions of DOT-SP 16320, exposed to any elevated safety or health risk as a result of either the modal acoustic emission requalification testing itself or the service life extension? If so, identify the concern or concerns and provide substantive data, studies, references, and information to further characterize and/or quantify the concern.
2. Does the service-life extension offered by DOT-SP 16320 or the modal acoustic emission testing itself provide a benefit to either end users or institutional users (*e.g.*, fire departments)? If so, please provide any relevant data, studies, references, or other corroborating information.
3. What factors do respiratory protection program managers consider in determining whether to replace an expiring cylinder with a new replacement cylinder or requalify the expiring cylinder using modal acoustic emission testing?

4. In which industries and operations are modal acoustic emission-qualified cylinders currently being used?

John J. Howard,

Director,

National Institute for Occupational Safety and Health,

Centers for Disease Control and Prevention.

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