

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

June 19, 1985

IE INFORMATION NOTICE NO. 85-48: RESPIRATOR USERS NOTICE: DEFECTIVE SELF-CONTAINED BREATHING APPARATUS AIR CYLINDERS

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP), research and test reactor licensees, fuel cycle licensees, and Priority 1 material licensees.

Purpose:

This information notice is to alert licensees of two recent "Respirator Users Notices" issued by the Department of Health and Human Services (HHS), concerning a serious defect in self-contained breathing apparatus (SCBA). This updates information previously provided in Information Notice 84-34. It is expected that licensees will review the information for applicability to their facilities and consider actions, if appropriate, to preclude use of a potentially defective respirator. However, suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or response is required.


Description of Circumstances:

Information Notice 84-34, issued on April 23, 1984, discussed a serious safety defect in SCBA hoop-wrapped aluminum air cylinders rated at 4500 psi and manufactured under the Department of Transportation (DOT) Exemption DOT-E-7235. Appropriate warning notices from DOT, HHS, Scott Aviation and Survivair were included.

On November 20, 1984, HHS issued a Respirator Users Notice announcing the recall of a product manufactured by Luxfer USA, Ltd. (Attachment 1). On May 7, 1985, HHS issued another Respirator Users Notice on the same subject which also described a reported explosion (Attachment 2).

Evidently not all end-users of the affected Luxfer SCBA cylinders have responded to the manufacturer's product recall. The reported catastrophic cylinder failures have demonstrated an extreme personnel hazard. In the interest of safety for workers, licensees may wish to share this information with other potential users, such as local fire departments, along with checking their own cylinders.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact Luxfer USA, Ltd. or the Regional Administrator of the appropriate NRC regional office or this office.



Edward L. Jordan, Director  
Division of Emergency Preparedness  
and Engineering Response  
Office of Inspection and Enforcement

Technical Contacts: J. E. Wigginton, IE  
(301) 492-4967

R. L. Pedersen, IE  
(301) 492-9475

**Attachments:**

1. Respirator Users Notice (November 20, 1984)
2. Respirator Users Notice (May 7, 1985)
3. List of Recently Issued IE Information Notices



Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

November 20, 1984

**RESPIRATOR USERS NOTICE**

**4500-psi Hoop-wrapped Aluminum Cylinders Manufactured by  
Luxfer USA Ltd., 1995 Third Street, Riverside, CA 92507**

The National Institute for Occupational Safety and Health (NIOSH) issued a Respirator Users Warning on July 21, 1983, and a Respirator Users Notice on February 29, 1984, concerning reported ruptures of certain 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders manufactured by Luxfer USA Ltd. Users were advised by NIOSH of a reduction in service pressure to 4000 psi, announced by the Department of Transportation (DOT), to prevent further ruptures. Users were also advised that the reduced pressure necessitated a temporary reduction in service time of Mine Safety and Health Administration (MSHA)/NIOSH-certified breathing apparatus incorporating those cylinders, from 30 minutes to not more than 25 minutes. A recall for examination of all such cylinders manufactured prior to May, 1981, was announced by Luxfer. NIOSH advised manufacturers of breathing apparatus incorporating those cylinders, of the status of corrective action by Luxfer, on April 16, and August 6, 1984.

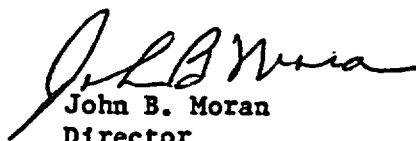
DOT announced in the Federal Register of November 1, 1984, that Luxfer will retrofit each 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinder, with a steel neck ring, designed to prevent cylinder rupture. DOT has accepted this ring as a corrective action and will permit cylinders fitted with this ring to be pressurized to 4500 psi.

Luxfer has advised NIOSH that retrofit facilities have been established which have been identified to DOT and to which users need to return Luxfer 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders for addition of the steel neck ring.

These facilities will accept cylinders for retrofitting, without charge to the user, until June 1, 1985. After that date, cylinders must be returned to Luxfer USA Ltd., at Riverside, CA, and a charge will be made for retrofitting cylinders with the steel neck ring. Luxfer is contacting cylinder users with scheduling information for the retrofit of their 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders. Users who are not contacted by December 31, 1984, are urged to write or call Luxfer USA Ltd., 1995 Third Street, Riverside, CA 92507 (714-684-5110), and arrange for cylinder retrofitting.

**Page 2-Users Notice**

Until cylinders are retrofitted, the maximum pressure of 4,000 psi and the temporary rated service time of not more than 25 minutes will remain in effect. After September 1, 1985, only those self-contained breathing apparatus incorporating 4500-psi/DOT-E7235 hoop-wrapped aluminum cylinders, which have such cylinders retrofitted with a steel neck ring by an authorized retrofit facility, will be considered to be certified by MSHA/NIOSH. After cylinder retrofitting, the rated service time for these MSHA/NIOSH-approved self-contained breathing apparatus will return to the original 30 minutes.



John B. Moran  
Director  
Division of Safety Research

**Changes and corrections in  
NAMES AND ADDRESSES OF PERSONS WHO ARE RESPONSIBLE  
FOR INVESTIGATION OF PROBLEMS WITH MSHA/NIOSH-APPROVED RESPIRATORS**

**Page One:** Change Glendale Opeical Co. to Glendale Optical Co.

**Page Two:** Delete Mr. Ben Huey, Rexnord Safety Products, 45 Great Valley Parkway, Malvern, PA 19355.

Add Mr. John Moffa, Rexnord, 45 Great Valley Parkway, Malvern, PA 19355.



Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

May 7, 1985

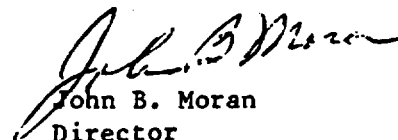
RESPIRATOR USERS NOTICE

Addition of Steel Neck Ring to 4500-psi Hoop-wrapped  
Aluminum Cylinders Manufactured by Luxfer USA Ltd.

The National Institute for Occupational Safety and Health (NIOSH) issued a Respirator Users Notice on November 20, 1984, advising users of self-contained breathing apparatus which incorporate 4500-psi/DOT-E 7235 hoop-wrapped aluminum cylinders, of the need to return those cylinders to Luxfer for installation of a steel neck ring. That ring is designed to prevent the possibility of sudden rupture of the cylinder when it is pressurized to 4500 psi.

It is urgent, to prevent such rupture from occurring, that every 4500-psi/DOT-E 7235 cylinder in use or being stored for future use, be fitted with this ring. Hydrostatic test stations may not accept unfitted cylinders for hydrostatic testing. The cylinder without a neck ring cannot be used as part of an MSHA/NIOSH-approved self-contained breathing apparatus after September 1, 1985. Do not pressurize a 4500-psi/DOT-E 7235 cylinder above 4000 psi until after the neck ring is installed.

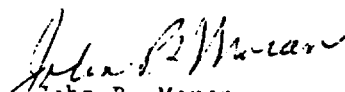
If you have, or are aware of, the location of any 4500-psi/DOT-E 7235 hoop wrapped aluminum cylinders, manufactured by Luxfer USA Ltd., that have not been fitted with a steel neck ring, you should immediately contact Luxfer and obtain information on installation of that ring. Write or call Luxfer USA, Ltd., 1995 Third Street, Riverside, CA 92507, (714) 684-5110.

  
John B. Moran  
Director

Division of Safety Research

May 8, 1985

NIOSH has been advised that a Luxfer 4500-psi DOT-E 7235 cylinder ruptured on May 6, 1985, while being charged to 2,000 psi. The cylinder was being charged in a water bath. No one was injured, but the cylinder head was found 6 blocks away and the cylinder body was found 2 blocks away from the charging station. This cylinder was one of those recalled by Luxfer in July, 1983 (Serial Nos. WA 43160 to WA 50178 and WF 20312 to WF 21548). It was not returned for replacement, nor was it fitted with a steel neck ring.



LIST OF RECENTLY ISSUED  
 IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
85-47	Potential Effect Of Line-Induced Vibration On Certain Target Rock Solenoid-Operated Valves	6/18/85	All power reactor facilities holding an OL or CP
85-46	Clarification Of Several Aspects Of Removable Radio-active Surface Contamination Limits For Transport Packages	6/10/85	All power reactor facilities holding an OL
85-45	Potential Seismic Interaction Involving The Movable In-Core Flux Mapping System Used In Westinghouse Designed Plants	6/6/85	All power reactor facilities holding an OL or CP
85-44	Emergency Communication System Monthly Test	5/30/85	All power reactor facilities holding an OL
85-43	Radiography Events At Power Reactors	5/30/85	All power reactor facilities holding an OL or CP
85-42	Loose Phosphor In Panasonic 800 Series Badge Thermo-luminescent Dosimeter (TLD) Elements	5/29/85	All power reactor facilities holding an OL or CP
85-41	Scheduling Of Pre-Licensing Emergency Preparedness Exercises	5/24/85	All power reactor facilities holding a CP
85-40	Deficiencies In Equipment Qualification Testing And Certification Process	5/22/85	All power reactor facilities holding an OL or CP
85-39	Auditability of Electrical Equipment Qualification Records At Licensees' Facilities	5/22/85	All power reactor facilities holding an OL or CP

OL = Operating License  
 CP = Constructor Permit