SSINS No.: 6835
IN 86-46

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

June 12, 1986

IE INFORMATION NOTICE NO. 86-46: IMPROPER CLEANING AND DECONTAMINATION OF RESPIRATORY PROTECTION EQUIPMENT

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP) and fuel fabrication facilities.

Purpose:

This notice is being issued to alert recipients of the potential loss of performance or safety function of respiratory protection devices from improper cleaning and decontamination techniques. It is expected that recipients will review the information for applicability to their respiratory protection program and consider actions, if appropriate, to preclude similar problems at their facility. However, suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

In November 1985, Point Beach Nuclear Station reported on the Institute of Nuclear Power Operations' (INPO's) "Note Pad" a cracking problem they noted with the plastic coupling nut on Mine Safety Appliance (MSA) Ultra-twin Respirators. This coupling nut fits over the speaking diaphragm and can be removed to connect an air hose if needed. Cracks in these coupling nuts lead to excessive respirator leakage and reduction of protection. In response to the Point Beach report, MSA initiated an investigation that included a survey of other Ultra-twin users. MSA concluded that the reported cracking did not indicate a problem with their product. With the exception of the Susquehanna station, the investigation found less than a 1% incidence of cracked coupling nuts. MSA considers this normal for a plastic replacement part. The relatively high incidence of cracking found at Susquehanna (17%) was attributed to the improper use of organic solvents to clean or decontaminate the units. The cracks noted at Susquehanna were noticeably different from those noted at the other facilities surveyed. MSA was able to reproduce this type of cracking by exposing coupling nuts to Freon.

Discussion:

The results of the MSA survey point out the importance of following manufacturers recommended cleaning practices. Use of improper or harsh cleaning techniques can lead to a degradation of integrity or loss of a safety function.

Examples of poor practices, such as stripping the paint from self-contained breathing apparatus (SCBA) air cylinders to remove fixed contamination, have been noted. An important safety function can be lost if the cylinders are not repainted with the proper paint because the manufacturer-applied coating is designed to indicate excessive heating of the air cylinder by discoloring at 350°F. Also, significant degradation of structural integrity can result if this decontamination technique is used on composite air cylinders. Commercial paint stripper will attack the bonding material of the reinforcing fiberglass wrapping.

Licensees are reminded that proper cleaning and decontamination of respiratory protection devices is essential to their safe use. Even apparently mild cleaning techniques can unwittingly cause a loss of safety function. Submersion of the BIOPAK-60 rebreather SCBA respirator in soapy water will cause serious corrosion of the unit's oxygen reserve alarm. Some cases have been reported in which this type of corrosion was sufficient to defeat the alarm functions. The manufacturer does not recommend submerging the unit to clean it. Manufacturers recommendations for cleaning and decontaminating a respirator are found in the technical literature supplied with the respirator. Additional information on the appropriateness of a particular cleaning technique can be obtained by contacting the respective manufacturer.

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

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

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Attachment: List of Recently Issued IE Information Notices

Attachment 1
IN 86-46
June 12, 1986

LIST OF RECENTLY ISSUED IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
86-45	Potential Falsification Of Test Reports On Flanges Manufactured By Golden Gate Forge And Flange, Inc.	6/10/86	All power reactor facilities holding an OL or CP and research and test facilities
86-44	Failure To Follow Procedures When Working In High Radiation Areas	6/10/86	All power reactor facilities holding an OL or CP and research and test reactors
86-43	Problems With Silver Zeolite Sampling Of Airborne Radio-iodine	6/10/86	All power reactor facilities holding an OL or CP
86-42	Improper Maintenance Of Radiation Monitoring Systems	6/9/86	All power rector facilities holding an OL or CP
86-41	Evaluation Of Questionable Exposure Readings Of Licensee Personnel Dosimeters	6/9/86	All byproduct material licensees
86-32 Sup. 1	Request For Collection Of Licensee Radioactivity Measurements Attributed To The Chernobyl Nuclear Plant Accident	6/6/86	All power reactor facilities holding an OL or CP
86-40	Degraded Ability To Isolate The Reactor Coolant System From Low-Pressure Coolant Systems in BWRS	6/5/86	All power reactor facilities holding an OL or CP
86-39	Failures Of RHR Pump Motors And Pump Internals	5/20/86	All power reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit