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RECORD #162

TITLE: Contact Lenses Used With Respirators

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 05 1989

MEMORANDUM FOR: Malcolm R. Knapp, Director, DRSS, Region I
J. Philip Stohr, Director, DRSS, Region II
John W. N. Hickey, Acting Director, DRSS, Region III
Arthur B. Beach, Director, DRSS, Region IV
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FROM: Frank J. Congel, Director
Division of Radiation Protection
and Emergency Preparedness
Office of Nuclear Reactor Regulation

Richard E. Cunningham, Director
Division of Industrial and Medical
Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

SUBJECT: CONTACT LENSES USED WITH RESPIRATORS

- REFERENCES:
- (a) Lawrence Livermore National Laboratory report of August 16, 1985 (DE86001775, UCRL-53653) by Robert A. da Rosa and Catherine Weaver, entitled, "Is It Safe to Wear Contact Lenses with a Full-Facepiece Respirator?"
 - (b) U.S. Department of Energy memorandum of September 23, 1986 from Mary L. Walker, Subject: Amendment of the Occupational Safety and Health Administration (OSHA) Prohibition on Wearing Contact Lenses in Contaminated Atmospheres with Full-Face Respirators.
 - (c) U.S. Department of Labor, Occupational Safety and Health Administration, memorandum of February 8, 1988 from Thomas Shepich, Subject: Contact Lenses Used with Respirators (29 CFR 1910.34(e)(5)(ii)).
 - (d) ANSI Z88.2-1989, American National Standard Practices For Respiratory Protection.

References (a) and (b) above accompanied the June 3, 1986 memorandum from Robert L. Baer, Office of Inspection and Enforcement to the Regional Branch Chiefs of the Emergency Preparedness and Radiological Protection of the Division of Radiation Safety and Safeguards. These references shed new light on

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JUN 05 1989

the NRC policy on the use of prescription lenses with respirators. As referenced in Regulatory Guide 8.15 and stated in NUREG-0041, the policy states:

"Contact lenses shall not be worn with full face respirators. These devices present a distinct hazard to the individual owing to the possibility of the lenses slipping because of pressure on the outside corners of the eyes from a full face mask or a speck of dirt getting under them while the respirator is being worn. Corrective action would entail removing the respirator, which would mean that the individual would either have to leave the contaminated atmosphere or run the risk of exposure if he removed the respirator in the contaminated area."

On the basis of references (a) and (b), the June 3, 1986 memorandum contemplated a policy change that would permit NRC licensees to use contact lenses with respirators. However, at that time the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) prohibited the use of contact lenses with respirators in nonradioactive environments. The NRC staff postponed the contemplated policy change, rather than implementing different policies and regulations for radioactive and nonradioactive environments. Subsequently, OSHA revisited this subject.

The enclosed copy of the February 8, 1988 memorandum from OSHA, reference (c), modified OSHA enforcement procedures so that, among others, violations involving the use of gas permeable and soft contact lenses shall be documented but citations shall not be issued. In view of this modified enforcement procedure of OSHA, the previously contemplated NRC policy change to permit the use of contact lenses with respirators was reconsidered. The staff continues to believe that the use of contact lenses with respirators will enhance overall worker safety by improving the vision of those persons who regularly wear contact lenses and who are required to use respirators in the course of their jobs.

In response to requests from NRR, the Office of Nuclear Regulatory Research has budgeted for comprehensive revisions of 10 CFR Part 20 and Regulatory Guide 8.15. These revisions will incorporate updated standards including those developed by ANSI Committee Z88.2. Specifically, the ANSI Committee draft report, reference (d) (in publication), states:

"6.5.3.3 Use of contact lenses is permitted with respirator wear provided the individual has previously demonstrated that he or she has had successful experience wearing contact lenses. The contact lens wearer shall be required to have practice wearing the respirator while wearing the contact lenses."

Accordingly, the NRC staff position is changed to permit the use of contact lenses with respirators by adoption of the above draft ANSI standard as quoted. We expect that licensees will be informed of this policy change by manifold sources including the NRC Regional Offices, Industry Organizations, and documents made available to the Public Document Rooms.

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The NRC staff contact in NRR on this subject is Robert A. Meck (492-1111), and in NMSS the NRC staff contact is Donald A. Cool (492-3422). Please report any technical problems stemming from the use of contact lenses with respirators to the appropriate contact. Such information may be useful in rulemaking.

Original signed by Frank J. Congel

Frank J. Congel, Director
Division of Radiation Protection
and Emergency Preparedness
Office of Nuclear Reactor Regulation

Glen L. Sjoblom



Richard E. Cunningham, Director
Division of Industrial and Medical
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Office of Nuclear Material Safety
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Enclosure:
As Stated

- cc: T. Shepich, OSHA
- P. Womback, DOE
- R. DaRoza, ANSI
- R. E. Masse, INPO
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U.S. Department of Labor

Occupational Safety and Health Administration
Washington, D.C. 20210

Reply to the Attention of:



FEB 8 1988

MEMORANDUM FOR: REGIONAL ADMINISTRATORS

THROUGH: *Leo Carey*
Leo Carey, Director
Office of Field Programs

FROM: Thomas Shepich, Director
Directorate of Compliance Programs

SUBJECT: Contact Lenses Used With Respirators
(29 CFR 1910.34(e)(5)(ii))

Section 1910.134(e)(5)(ii), in part, reads, "... Wearing of contact lenses in contaminated atmospheres with a respirator shall not be allowed...." This wording was adopted in 1971 into OSHA's standards without change from the American National Standard "Practices for Respiratory Protection," ANSI Z88.2-1969, in accordance with Section 6(a) of the Occupational Safety and Health Act of 1970. The current ANSI Z88.2-1980 standard also includes this restriction on the wearing of contact lenses.

OSHA has frequently been asked why the prohibition on contact lenses is included in our requirements and, as a result, the matter has been investigated, including the funding of a research project on the wearing of contact lenses by firefighters using full facepiece respirators. Current members of the ANSI Z88.2 Committee have suggested hypothetical scenarios which they believe would have supported the prohibition. However, actual incidents resulting in employee exposure to inhalation hazards or to eye hazards which were aggravated by the use of contact lenses were not forthcoming from the ANSI Committee members contacted. The uncertainty of reasons for the prohibition on contact lens use prompted funding of the research project conducted by Lawrence Livermore National Laboratories (LLNL). A copy of the final LLNL report is attached for your information.

Recommendations contained in the LLNL report read, "Based on a numerical analysis of the responses to the questionnaire, our follow-up interviews with those indicating the worst problems, and reading the 829 comments on positive or negative experiences

with contacts, we believe the prohibition against wearing contacts while using a full-facepiece respirator should be revoked or withdrawn. Wearers of corrective lenses would have the option of wearing either contacts or eyeglasses with their full facepiece respirators. One must keep in mind, however, that some people do not adapt well to contacts.

If the person cannot comfortably wear contacts in everyday non-work situations, then he will probably not adapt well to using them with a full-facepiece respirator. Also, a person's facial shape and eyeglass prescription may be such that he cannot obtain and retain a proper alignment of his eyeglasses inside the full-facepiece. In this case, he would have to wear contacts, or no corrective lenses at all.... Considering the severe conditions under which firefighters must work, we believe it is unlikely that the working conditions of any other SCBA users would preclude the similar use of contact lenses. This would also include negative-pressure air-purifying respirators." Other reports and articles (list attached) have been reviewed which further support that the prohibition in the current standards is unwarranted.

Although, the LLNL report deals specifically with firefighters and full-facepiece SCBA's, OSHA knows of no reason why other work situations and types of respirators would present greater hazards relevant to wearing contact lenses. Therefore, this memorandum applies to all respirator use in all workplaces unless specific information should become available which indicates a hazard which has not been considered.

Even though much of the material mentioned above applies to all types of contact lenses, OSHA staff wishes to further investigate the issue of non gas permeable hard contact lenses before completely suspending the prohibition, since the original prohibition in ANSI Z87.1 was adopted when the use of this type of hard lens was prevalent.

In consideration of the results of our investigation, and in accordance with the Agency's intent to modify the rule, an interim enforcement policy is appropriate. Accordingly, this memorandum modifies current enforcement procedures as follows:

1. Violations of the respirator standard involving the use of gas permeable and soft contact lenses shall continue to be documented in the case file and recorded as de minimis; citations shall not be issued.

2. Evidence indicating any negative effect associated with the use of contact lenses with respirators should be provided to this office. Benefits associated with the use of contact lenses with respirators would also be useful to this office.

The issue with non gas permeable hard contact lenses will be resolved in the revision effort for §1910.134 which is now underway.

Attachments

1. Giroux, Arthur R., "Time to Reconsider Contact Lens Policies?" Occupational Hazards, November 1985.
2. Nilsson, Sven Erik G., et al, (a) "The Use of Contact Lens in Environments with Organic Solvents, Acids or Alkalis," ACTA Ophthalmologica, Vol. 60, 1982.
 - (b) "The Use of Contact Lenses in Wet or Damp Environments," ACTA Ophthalmologica, Vol. 58, 1980;
 - (c) "Contact Lenses and Mechanical Trauma to the Eye," ACTA Ophthalmologica, Vol. 59, 1981;
 - (d) "Contact Lens Wear in an Environmental Contaminated with Metal Particles," ACTA Ophthalmologica, Vol. 61, 1983.
3. Da Roza, Robert A., "Is it Safe to Wear Contact Lenses?" Lawrence Livermore National Laboratory, UCRL-53653, August 16, 1985.
4. Guthrie, Jonn W., et al, "An Investigation of the Chemical Contact Lens Problem," Journal of Occupational Medicine, March 1975.
5. Aalphen, C. C. Kok-van, et al, "Protection of the Police Against Tear Gas with Soft Lenses," Military Medicine, Vol. 150, August 1985.
6. Kartchner, Mark N., "Fight Fires with Contacts?" Contact Lens Forum, March 1985.
7. Hirschfelder, Dennis, "Contact Lenses in the Workplace: The Dilemma," Sightsaving, Vol. 52, No. 1, 1983, National Society to Prevent Blindness.