

ATTACHMENT

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BETH TREANOR - API
LARRY BIRKNER - ATLANTIC RICHFIELD

Per the October 28 Semi-annual Agenda of Regulations, OSHA intends to review "Engineering Controls vs. Respirators; generic question." Current OSHA standards, both generic and specific, require that feasible engineering controls are to be used as the primary means to control employee exposure to airborne toxic materials, rather than respirators. This policy has been targeted for review by the President's task force on Regulatory Relief. According to the Semi-annual Agenda, OSHA intends to re-examine this policy on cost-effectiveness grounds, and consider modifications of present standards. Some thoughts follow.

(1) Scope of the Issue

OSHA has identified the issue as "Engineering Controls vs. Respirators; generic question." Industry is using the phrase "Hierarchy of Controls." The industry phrase is potentially larger in scope, because it embraces workplace agents other than air contaminants (e.g., noise-engineering controls vs. hearing protectors; heat stress - engineering controls vs. protective equipment). Consequently, it may not be prudent to adopt the phrase "Hierarchy of Controls" unless we intentionally decide to tackle the issue on all fronts.

(2) Existing OSHA Regulations

The primacy of engineering controls is well-established in existing OSHA regulations, both generally and specifically. A summary follows (see attachments for specific language).

(a) For Air Contaminants

Generically

1910.134	Respiratory Protection
1910.1000	(For compliance with PEL's)
1990.157	Carcinogen Policy Model Standard

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Specifically

1910.1001	Asbestos
1910.1017	Vinyl chloride
1910.1018	Inorganic arsenic
1910.1025	Lead
1910.1028	Benzene (overturned, for other reasons)
1910.1029	Coke oven emissions
1910.1043	Cotton dust
1910.1044	DBCP
1910.1045	Acrylonitrile
1910.1003 thru 1910.1016	- Thirteen carcinogens, with specific control requirements, backed up with respirators.

(b) For Noise

1910.95

Taken altogether, the above regulations comprise a formidable regulatory entrenchment of the primacy of engineering controls. Further, each new specific-substance standard added with equivalent language exacerbates the problem. Overall however, the principal problem stems from the generic requirements in 1910.134 respiratory protection, 1910.1000 - compliance with PEL's, and 1990.151 carcinogen policy model standard (plus 1910.95 for the noise - hearing protector analogy).

(3) Industry's Objective and Strategy

Industry needs to sort out an objective, and then develop a strategy. Possible objectives include:

- (a) Overturn the primacy of engineering controls in all existing regulations, and preclude recurrence in future regulations. If accomplished by the regulatory process (e.g., rulemaking), this is truly a prodigious task. If attempted on a rule-by-rule basis, it will never be accomplished. If attempted generically, organized labor would wage an all-out holy war. It seems likely that this objective is achievable only by legislative or judicial action, establishing protective equipment as equal to engineering controls, or requiring cost-benefit analysis for any OSHA standard.
- (b) Curtail the primacy of engineering controls, and establish a "beach head".

A possible strategy for this approach might include one or all of the following.

- (1) Eliminate primacy of engineering controls from 1910.134 in the expected revised rule. Supporting logic is that 1910.134 establishes a minimum requirement for a respiratory protection

program, if such a program is required. As such, 1910.134 need not/should not mention engineering controls (or work practices) in any fashion.

- (2) Eliminate primacy of engineering controls from 1990.151, during expected OSHA revision (or deletion) of the generic carcinogen standard.
- (3) Revise 1910.1000 to eliminate the primacy of engineering controls. Supporting logic would have to be developed.
- (4) Revise 1910.95 to eliminate the primacy of engineering controls for noise. Supporting logic would have to be developed.
- (5) Select one substance specific standard and eliminate primacy of engineering controls therein. Likely candidates are cotton dust and coke ovens. Such an action, if successful, would establish a beach head, and refine industry's arguments.

Of the above, it seems essential to achieve at least (1) and (2) or nothing really is gained. It seems plausible that this might be achieved, because regulatory activity relating to (1) and (2) is already underway. While (3) should also be achieved, it seems highly unlikely that a successful challenge could be mounted, particularly if constrained to the two years remaining in this administration. Given this, the next best strategy is to ignore (3), and concentrate on preventing proliferation of mandated engineering controls. Conceptually, this would be done by achieving (1) and (2), ignoring (3), and developing the logic for not continuing to mandate engineering controls in future substance-specific standards. This logic could be conveyed to OSHA via informal meetings, and applied in each specific rulemaking. The first likely vehicle could be EO regulation.

Meanwhile, if the steel industry can argue successfully for deletion (not reversal) of primacy of engineering controls in coke ovens, let's cheer them on. However, I doubt that anyone can support reversal. Also, if OSHA provides the opportunity, primacy of engineering controls in noise should be eliminated (but not reversed).

(4) Conclusions

The primacy of engineering controls is deeply entrenched in existing regulations. Organized labor can be expected to wage a holy war to present overturning the primacy of engineering controls. Legislative relief may be a better course than regulatory relief. Deletions of primacy of engineering controls from 1910.134 and 1990.151 should

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probably be pursued, regardless. We may be better off to ignore 1910.1000, and concentrate instead on preventing proliferation, at each opportunity. The first opportunity may be E0.

This thought paper is intended to stimulate discussion. It is based on the arguable premise that some sort of change to the primacy of engineering controls is justified. That premise, in itself, might generate discussion.



J. L. Rivard

Attachments

cc: Darrell Mattheis - ORC
Milton Freifeld - CMA
Charles Richards - Gulf Oil Chemicals

bc: H. L. Kusnetz
C. F. Phillips
G. L. Greene

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METHODS OF COMPLIANCE HIERARCHY
29 CFR 1910.134(a)(1) and 1910.1000(e);
Revision

Current 1910.134(a)(1)

"Respiratory Protection

(a) Permissible practice. (1) In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smoke, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). [Emphasis added.] When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements."

Current 1910.1000(e)

"To achieve compliance with paragraph (a) through (d) of this section, administrative or engineering controls must first be determined and implemented whenever feasible. When controls are not feasible to achieve full compliance, protective equipment or any other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed in this section. [Emphasis added.] Any equipment and/or technical measures used for this purpose must be approved for each particular use by a competent industrial hygienist or other technically qualified person. Whenever respirators are used, their use shall comply with §1910.134."

CURRENT 1910.95 (b)(1)

1910.95(b)(1) Noise: "When employees are subjected to sound exceeding those listed in Table G-16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table."

CURRENT 1910.1017
VINYL CHLORIDE

(1) Methods of compliance. Employer exposures to vinyl chloride shall be controlled to at or below the permissible exposure limit provided in paragraph (e) of this section by engineering, work practice, and personal protective controls as follows:

(1) Feasible engineering and work practice controls shall immediately be used to reduce exposures to at or below the permissible exposure limit.

(2) Wherever feasible engineering and work practice controls which can be instituted immediately are not sufficient to reduce exposures to at or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest practicable level, and shall be supplemented by respiratory protection in accordance with paragraph (g) of this

section. A program shall be established and implemented to reduce exposures to at or below the permissible exposure limit, or to the greatest extent feasible, solely by means of engineering and work practice controls, as soon as feasible.

(3) Written plans for such a program shall be developed and furnished upon request for examination and copying to authorized representatives of the Assistant Secretary and the Director. Such plans shall be updated at least every six months.

1910.1001 Asbestos

(a) *Methods of compliance*—(1) *Engineering methods.* (i) *Engineering controls.* Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in paragraph (b) of this section.

(d) *Personal protective equipment*—(1) Compliance with the exposure limits prescribed by paragraph (b) of this section may not be achieved by the use of respirators or shift rotation of employees, except:

(i) During the time period necessary to install the engineering controls and to institute the work practices required by paragraph (c) of this section;

(ii) In work situations in which the methods prescribed in paragraph (c) of this section are either technically not feasible or feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the limits prescribed by paragraph (b) of this section; or

(iii) In emergencies.

(iv) Where both respirators and personnel rotation are allowed by subdivisions (i), (ii), or (iii) of this subparagraph, and both are practicable, personnel rotation shall be preferred and used.

1910.1003
(4-Nitrobiphenyl)

Similar (identical)
requirements for
the other "original"
Carcinogens.
No PEL's

(c) *Requirements for areas containing 4-Nitrobiphenyl.* A regulated area shall be established by an employer where 4-Nitrobiphenyl is manufactured, processed, used, repackaged, released, handled or stored. All such areas shall be controlled in accordance with the requirements for the following category or categories describing the operation involved: (1) *Isolated systems.* Employees working with 4-Nitrobiphenyl within an isolated system such as a "glove box" shall wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

(2) *Closed system operation.* Within regulated areas where 4-Nitrobiphenyl is stored in sealed containers, or contained in a closed system, including piping systems, with any sample ports or openings closed while 4-Nitrobiphenyl is contained within: (i) Access shall be restricted to authorized employees only;

(ii) Employees shall be required to wash hands, forearms, face and neck upon each exit from the regulated area, close to the point of exit and before engaging in other activities.

(3) *Open vessel system operations.* Open vessel system operations as defined in paragraph (b) (13) of this section are prohibited.

(4) *Transfer from a closed system, charging or discharging point operations, or otherwise opening a closed system.* In operations involving "laboratory type hoods," or in locations where 4-Nitrobiphenyl is contained in an otherwise "closed system," but is transferred, charged, or discharged into other normally closed containers, the provisions of this subparagraph shall apply. (i) Access shall be restricted to authorized employees only;

(iii) Each operation shall be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. Exhaust air shall not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated. Clean makeup air shall be introduced in sufficient volume to maintain the correct operation of the local exhaust system.

(iii) Employees shall be provided with, and required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.

(iv) Employees engaged in 4-Nitrobiphenyl handling operations shall be provided with and required to wear and use a half-face, filter-type respirator for dusts, mists, and fumes, in accordance with § 1910.134. A respirator affording higher levels of protection may be substituted.

1910.1018 Arsenic

(g) *Methods of compliance*—(1) *Controls.* (i) The employer shall institute at the earliest possible time but not later than December 31, 1979, engineering and work practice controls to reduce exposures to or below the permissible exposure limit, except to the extent that the employer can establish that such controls are not feasible.

(ii) Where engineering and work practice controls are not sufficient to reduce exposures to or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest levels achievable by these controls and shall be supplemented by the use of respirators in accordance with paragraph (h) of this section and other necessary personal protective equipment. Employee rotation is not required as a control strategy before respiratory protection is instituted.

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