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The Dow Chemical Company
Midland, Michigan 48674

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DOCKET H-049
RESPIRATORY PROTECTION

Enclosed are 4 copies of the written submission of The Dow Chemical Company (Dow) to the Docket H-049 on OSHA's Proposed Standard for Respiratory Protection. We are pleased to make these comments to OSHA and intend to present testimony to the informal rulemaking hearing.

Dow is concerned with the amount of paperwork and required "evaluations" that this standard requires. We believe OSHA should carefully evaluate this proposal and modify or eliminate many of these requirements, e.g. the requirements that are meant to document compliance. These documents do nothing for the health and safety of employees, only make it easy for the Compliance Officer to find violations of the standard.

If OSHA has any questions about this submission please do not hesitate to contact Dow.

Sincerely,

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Enc.

COMMENTS OF
THE DOW CHEMICAL COMPANY
TO THE OCCUPATIONAL SAFETY
AND HEALTH ADMINISTRATION ON
RESPIRATORY PROTECTION;
PROPOSED RULE

APRIL 13, 1995

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COMMENTS OF THE DOW CHEMICAL COMPANY ON OSHA'S PROPOSED RULE ON RESPIRATORY PROTECTION

The Dow Chemical Company (Dow) appreciates this opportunity to comment on OSHA's proposed rule on Respiratory Protection. Dow is supportive of OSHA's updating the respiratory protection standard and at the same time updating the respirator sections of the chemical-specific standards. We believe that this proposal is long overdue and that certain changes OSHA has proposed will make respirator programs more effective. As OSHA is aware, Dow and its affiliated companies utilize respiratory protection in manufacturing and research operations for employee protection. Dow has approximately 30,000 employees in the United States. We have an extensive health and safety program in which each employee is an active participant. Our comments on this proposal are extensive and were developed by a number of individuals in Dow and its affiliated companies. In addition, Dow personnel helped develop the comments which OSHA will receive from the Chemical Manufacturers Association (CMA) and from Organization Resources Counselors, Inc. (ORC) and therefore we support those comments. Our individual comments will address specific sections of the standard and will be identified by the section involved.

GENERAL

Dow has a significant concern with the extensive amount of paperwork and evaluations that must be done to meet the requirements of this standard. We believe that evaluation of programs is an on-going operation that should never stop. In addition, when management of change programs identify changes in operations, programs in that area should be reevaluated. Because of this, Dow recommends that OSHA evaluate this proposal critically and eliminate requirements for paperwork and evaluations that are designed principally to document compliance and are truly not going to significantly further the cause of health and safety in the workplace. Throughout these comments, Dow will provide examples which OSHA should consider

eliminating as they add burden without any commensurate health and safety benefit.

In making these comments Dow is making some of the same comments that were made to OSHA on earlier proposed drafts. We believe, however, that OSHA and industry should reevaluate all comments that have been submitted throughout the rulemaking.

Dow agrees that OSHA should reevaluate previously promulgated standards, e.g. chemical-specific standards, make modifications to them based on input from this rule-making and make them consistent with this standard. An example where consistency is needed is the requirement in the acrylonitrile standard for semiannual fit testing. This is totally without scientific basis and should be changed to be consistent with other chemical-specific standards or preferably, as our comments on this proposal read, biennially.

SCOPE AND APPLICATION - Paragraph (a)

Dow agrees with OSHA that feasible, accepted engineering control measures should be used as the first line of defense against excessive exposures to toxic materials. However, OSHA should make it clear that "feasible" includes not only technological but also economical considerations. In many instances engineering controls can be technologically feasible but would make the plant and/or process unprofitable and each plant and/or process must sustain itself.

Dow supports OSHA's views on voluntary respirator use as reflected on page 58895 of the Notice of Proposed Rulemaking (NPR). OSHA should, in this section, state clearly that if an employee requests respiratory protection and there is virtually no probability that exposures will be encountered above the Permissible Exposure Limits, then this standard is not applicable. The employer must then only ascertain that the employee is using the appropriate respirator for the toxic material and does not have to initiate the program, training, fit testing, medical surveillance, etc. requirements of this standard. We believe that the language found in the preamble should be incorporated into the main text of the standard.

DEFINITIONS - Paragraph (b)

Dow believes that OSHA should add to this section definitions for an "escape" respirator and an "emergency" respirator. These definitions would clarify requirements involving emergency respirators. Dow suggests that OSHA define an "escape" respirator as one that is used to quickly exit the area, one direction only, and an "emergency" respirator as one that is donned to investigate the emergency and perhaps enter a "hot zone". These definitions will clarify when requirements, such as monthly inspections, shall be carried out.

Adequate Warning Properties

The proposed definition does not recognize the use of mechanical detection equipment or other warning devices. Dow feels this is inappropriate. In some cases alarmed detectors or colorimetric devices may be used for detection of materials at levels below those causing sensory recognition. This could justify using, e.g. half-face respirators, when, due to the sensory recognition level, only air-supplied equipment would be acceptable according to the proposed standard. In addition, OSHA uses the words "olfactory fatigue" when in reality this is "sensory fatigue" because taste and irritation are also considered.

Assigned Protection Factors

OSHA has accepted only the NIOSH assigned protection factors (APF) when there are APFs assigned also by ANSI. Dow believes that the ANSI numbers, where available, are more appropriate because the ANSI numbers are established in a more peer-reviewed manner. NIOSH APFs are set without benefit of outside input nor peer-review. Additionally, in many cases we believe that the NIOSH APFs are too conservative in comparison to some of ANSI's values. Where available, OSHA should accept the APFs of ANSI.

Hazardous Exposure Level

Dow believes that the application of certain parts of this standard should be triggered by an OSHA PEL. However, we also believe OSHA should give

employers the flexibility of using their professional judgment if there is no PEL. OSHA should allow employers to use other limits in preference to the TLV or REL and disregard the hierarchy specified by OSHA if the employer has adequate, documented data to show this is appropriate. An example of another exposure limit might be one given by the manufacturer on a Material Safety Data Sheet. By triggering requirements on TLVs or RELs, OSHA has given them regulatory status without full benefit of the rulemaking and comment process. In addition, OSHA should make it very clear that if there is no PEL, TLV nor NIOSH value established, the value the employer chooses to use is not a regulatory level and OSHA will not cite the employer if OSHA disagrees with the level chosen. OSHA implies this will be the situation in the preamble, 58 FR 58896, center column, where it states, "This does not mean that OSHA is in effect establishing permissible exposure limits for these other substances."

Dow does not agree with calling these "Hazardous Exposure Levels" since this nomenclature can be misleading. Both the OSHA PEL and the ACGIH TLVs have some degree of safety built into the number and therefore the indication that these levels actually may be hazardous is misleading. A more appropriate term for these levels is "acceptable exposure limit."

Immediately Dangerous to Life or Health

OSHA's proposed definition for IDLH states that the term includes a concentration that would cause delayed adverse health effects. Dow believes that this could be interpreted to include any material which might have a chronic effect. We suggest the definition be rewritten to be the same as that found in ANSI Z-88.2-1992:

"Immediately dangerous to life or health (IDLH): Any atmosphere that poses an immediate hazard to life or poses immediate irreversible debilitating effects on health."

Furthermore, Dow is concerned that, at the present, the main organization setting IDLH levels is NIOSH. These numbers are published in the NIOSH "Pocket Guide to Chemical Hazards" and usually are set by NIOSH without benefit of rulemaking or peer-review. An example of this is the June 1994 version of this Guide in which NIOSH used new criteria for developing IDLH

Since solution of (3.15) requires iterative calculations, its use is generally restricted to computer analyses and in particular those which involve the fitting of log-linear models. Note that the problems with maximum likelihood estimation of the common odds ratio in a large series of small 2×2 tables (Breslow, 1981) do not apply to the present situation. Under the Poisson model, conditional and unconditional maximum likelihood estimators are identical (Haberman, 1974).

(d) *The Mantel-Haenszel estimate and its standard error*

The Mantel-Haenszel estimate for cohort data is a simple and robust alternative to maximum likelihood. It is written

$$\hat{\psi}_{MH} = \frac{\sum_{j=1}^J R_j}{\sum_{j=1}^J S_j} = \frac{\sum_{j=1}^J d_{j2} n_{j1} / N_j}{\sum_{j=1}^J d_{j1} n_{j2} / N_j}, \quad (3.16)$$

where R_j and S_j are defined by the numerator and denominator terms on the right-hand side of the equation. Clayton (1982) has shown that this estimate arises at the first stage of iteration of one of the computational methods used to find the maximum likelihood estimate. Numerical examples presented below indicate a very good agreement between the two.

A robust variance formula for the Mantel-Haenszel estimate was lacking at the time Volume 1 was written, but the situation has since been remedied both for cohort (Breslow, 1984b) and case-control studies (Robins *et al.*, 1986b). Because of the skewness of the distribution of $\hat{\psi}_{MH}$ it is more appropriately applied on the log scale. Using the fact that $\hat{\psi}_{MH} - \psi = \sum_j (R_j - \psi S_j) / \sum_j S_j$, we have the asymptotic

$$\text{Var}(\hat{\psi}_{MH}) = \frac{\sum_{j=1}^J \text{Var}(R_j - \psi S_j)}{\{\sum_{j=1}^J E(S_j)\}^2},$$

and thus that the estimated variance of $\hat{\beta}_{MH} = \log(\hat{\psi}_{MH})$ of the log relative risk parameter $\beta = \log(\psi)$ is

$$\text{Var}(\hat{\beta}_{MH}) = \hat{\psi}_{MH}^{-2} \text{Var}(\hat{\psi}_{MH}) = \frac{\sum_{j=1}^J n_{j1} n_{j2} D_j / N_j^2}{\hat{\psi}_{MH} \left\{ \sum_{j=1}^J \frac{n_{j1} n_{j2} D_j}{N_j (n_{j1} + \hat{\psi}_{MH} n_{j2})} \right\}^2}. \quad (3.17)$$

Equations (3.16) and (3.17) are symmetric in the sense that interchanging the role of exposed and unexposed subcohorts has the effect of transforming $\hat{\psi}_{MH}$ into $1/\hat{\psi}_{MH}$ and $\hat{\beta}_{MH}$ into $-\hat{\beta}_{MH}$, but leaves the estimate of $\text{Var}(\hat{\beta}_{MH}) = \text{Var}(-\hat{\beta}_{MH})$ unchanged. Equation (3.17) applies only to Poisson distributed data as collected in a cohort study. The recommended Mantel-Haenszel variance estimate for case-control studies (Robins *et al.*, 1986b) is more complicated.

One important use of any variance estimate is to set approximate confidence intervals on the estimated parameter. Using the interval $\hat{\beta}_{MH} \pm Z_{\alpha/2} \{\text{Var}(\hat{\beta}_{MH})\}^{1/2}$ for β , we have

$$\psi_L = \hat{\psi}_{MH} \exp \{-Z_{\alpha/2} (\text{Var} \hat{\beta}_{MH})^{1/2}\}$$

and

$$\psi_U = \hat{\psi}_{MH} \exp \{+Z_{\alpha/2} (\text{Var} \hat{\beta}_{MH})^{1/2}\}. \quad (3.18)$$

values. The only indication these changes were being made was a Federal Register notice that NIOSH was considering revising the IDLH values and that NIOSH would accept suggestions. No indication was given of how NIOSH was proposing to change the IDLHs nor when the method of revision was determined did NIOSH publish that for comment. Their activity resulted in the lowering of many, if not most, of the IDLH values, some significantly, without peer-review or further industry comment. Further, we totally disagree with the rationale behind some of the changes NIOSH has made. In effect, this has been rulemaking without effective notice and comment because of how IDLHs are used in this NPR. We believe that a more proper value to use is the Emergency Response Planning Guidelines (ERPGs) which are set under the auspices of the American Industrial Hygiene Association and allows for peer-review and comment.

Maximum Use Concentration

Maximum use concentrations (MUCs) are not always specified on the NIOSH approved label as stated by OSHA. As a result, Dow recommends that OSHA delete this verbiage from the proposal. At times MUCs are listed in product information with the canister. NIOSH has listed the general MUC for organic vapor as 1000 parts per million in 30 CFR 11.150, except for materials with poor warning properties or those which generate high heats of reaction with the sorbent material in the cartridge. In cases where MUCs are not specified and the employer has scientifically valid, documented data available demonstrating adequate capacity, OSHA should allow employers to rely on such data. This might be the case, e.g. where the employer has tested certain materials that NIOSH has not tested.

Pressure Demand/Demand

There appears to be a conflict between the proposed definitions for these two terms. "Demand" is defined as air flow when there is a lower pressure within the facepiece than the outside pressure, essentially a negative pressure demand situation. "Pressure demand" is defined as when the pressure inside the facepiece is maintained positive with respect to the outside pressure. To avoid any confusion between the two terms, Dow suggests that in the final

standard OSHA should use the terms "Negative Pressure Demand" and "Positive Pressure Demand."

Quantitative Fit Test

OSHA should revise this definition as it is too restrictive. A quantitative fit is the numerical evaluation of the leakage into the respirator and the method of obtaining this value is inconsequential. OSHA's terminology could have the effect of restricting from use the TSI PortaCount fit testing equipment which has become the standard of use in industry and even in OSHA. We agree with ORC that OSHA should adopt the following definition:

"Means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator."

Service Life

The definition of "Service Life" as finalized by OSHA should include the specific set of conditions, e.g. flow rate, temperature and humidity. It is important for evaluation of the service life in a specific atmosphere that these conditions be known. OSHA should use the ANSI definition of Service Life which is: "The time that a respirator provides adequate protection to the wearer" ANSI Z88.2-1992, section 3.51. This definition intuitively takes into account the conditions of use, substance, time, etc. OSHA also states in this proposed definition that the service life is determined by the manufacturer. Dow does not believe this to be an accurate statement and we believe that more service life data has been accumulated by users than by the manufacturers. OSHA should delete this statement from the definition.

RESPIRATORY PROTECTION PROGRAM - PARAGRAPH (c)

(c)(1) Dow supports OSHA's requirement that a written respiratory protection program be established " ••• as necessary to protect the health of employees." However, as indicated in earlier comments under "Scope," Dow does not believe that a written program should be required where respirators are not required to protect employee health. If employees are wearing respirators because they feel more comfortable with them, the employer should not be penalized with having to institute a full-blown program for

additional precautionary measure does not trigger the entire requirements of the standard."

(c)(1)(iv) We do not know why OSHA has decided to change their policy and require fit testing of air-supplied positive pressure respirators. This will be a very costly requirement for little, if any benefit. Dow agrees that emergency response personnel should be fit tested as they may enter potentially life threatening situations, but we question whether others will benefit from such a requirement. Dow recommends that OSHA modify this section to state, "Fit testing procedures for air-purifying respirators" and delete, "Fit testing procedures for air-purifying respirators and tight fitting positive pressure respirators."

Dow also does not understand why OSHA uses the adjectives "tight fitting" throughout the proposal since all respiratory facepieces are tight fitting except for PAPRs. If there is some reason other than to differentiate between PAPRs and other respirators, OSHA should make it clear in the document.

(c)(1)(vii) Dow suggests that OSHA delete this provision entirely. This requirement is merely a duplication of 29 CFR 1910.1200 and should be dropped so there is no possibility that an employer will be cited for the same infraction twice under two different standards. Such a situation is inappropriate as it puts an employer in "double jeopardy."

(c)(1)(viii) This section requires training to "ensure" the proper use and maintenance of respirators. Training can not ensure anything. The purpose of training is to provide appropriate information. This is a compliance issue and only compliance officers can verify. Instead, Dow suggests this section be changed to read: "Training of employees in the proper use and maintenance of the respirators."

(c)(2) OSHA must allow some flexibility in the designation of responsibility for the respiratory protection program. OSHA proposes that a "person" must be designated. This is acceptable for a small company or a small site of a large company. However, at a large site no one person has the necessary training

or experience to fulfill all the duties which OSHA says must be carried out. We continue to support the comments made by Donald Rapp of Dow in response to the previous notice of rulemaking, Ex. 36-40, that on large sites a committee or team is more likely to have joint responsibility because there may be no one individual with OSHA's stated requirements that can handle the program. OSHA should rewrite this with flexibility so that a team consisting of various disciplines can fulfill the duties OSHA proposes to require. This flexibility can be obtained by requiring the designation of a person or persons qualified by training and/or experience. OSHA stated in the preamble to this proposal, 59 FR 58898, that a single person must have responsibility and in the standard OSHA states that a person, not a team, must have the appropriate training and/or experience to be responsible. We suggest that OSHA change (c)(2) to read:

"The employer shall designate a person or team qualified by appropriate training and/or experience ••• effectiveness."

(c)(3) This section requires that the written program reflect current workplace conditions. This assumes a static workplace. In a large manufacturing site this can only be done if the program is written for the entire plant site. If the program is required to reflect every operation on a site, a hundred or more programs would be necessary on that site. Because the worksite may be constantly changing, OSHA must allow some flexibility in the updating of programs so that an exorbitant amount of time is not spent on unproductive paperwork. OSHA should change this section to read:

"To the extent possible, the written respiratory protection program shall reflect current workplace conditions significantly impacting proper respirator use."

SELECTION OF RESPIRATORS - PARAGRAPH (d)

(d)(1) Dow is concerned with the requirement that the employer provide respirators and respiratory equipment. This could be interpreted that employers would have to provide respirators even when they are being used only because the employees feel more comfortable wearing them. This is an employee/employer issue. This language should be changed to read:

"The employer shall provide required respirators and respiratory equipment at no cost to employees."

(d)(2) Overall, OSHA appears to have written this proposed standard in somewhat performance language. Dow wonders why then OSHA has written this particular section in specification language. In the preamble to this proposal, OSHA states that the availability of different sizes and types of respirators is critical (58 FR 58900). Dow agrees with this statement and believes that OSHA should, in its final standard, require that there be an availability of different sizes and types of respirators, but not specify that there be at least three sizes from at least two manufacturers. This could be done by requiring that the employer provide a selection that will, "yield a proper protective fit factor with a comfortable face fit." Moreover, this section, as written, could also be interpreted to require employers to have more than one type of self contained, air-supplied respirator on hand at a plant site. This requirement is unreasonable when evaluated on the basis of the possibility of incompatible parts being mixed, the lack of additional protection that this would achieve and the cost factor. Dow does not believe there is any commensurate safety benefit to such a requirement.

(d)(3) Dow believes this section is also too prescriptive. Any of the data pieces required by this section may be used in evaluations but they may not all be needed nor may they be available for "each work situation." In addition, this section would infer that each work operation where a respirator is worn must be evaluated with the data assembled for that operation. This is unnecessary since groups of operations can be evaluated at one time if the conditions are similar. This again is an example where more flexibility is needed because of the unnecessary burden that the required information would create. OSHA should write this section allowing more flexibility by stating:

"The employer shall consider the following information, where available, for work situations to determine that the respiratory protection required is appropriate for the work situations."

(d)(3)(v) This section, if read very literally, could require workplace sampling of airborne concentrations for each work situation since it requires that the employer "obtain and evaluate the following information ••• the results of workplace sampling of airborne concentrations of contaminants."

OSHA should add the words "if available" to this section so that it reads:

"The results of workplace sampling of airborne concentrations of contaminants, where available."

(d)(3)(ix) OSHA should delete the language which requires that each work situation be evaluated on the basis of fit test results. Fit test results have nothing to do with the work situation, only with whether the employee can be protected by a certain respirator, so they are an employee/respirator interface. If an employee can not achieve an adequate fit test with a respirator it should not be used in any work situation. Dow recommends that OSHA delete this section from the final rule.

(d)(4) Section (d)(4) requires employers to select "appropriate respirators from among those approved and certified" by NIOSH. NIOSH has not approved and certified certain respirators for certain applications. In some cases these respirators have been tested by employers or others and shown to be effective for certain materials. In this section OSHA should accept scientifically valid test data developed by a source other than NIOSH if the data shows the respirator is effective for the intended purpose. One example of this is the use of mouthbit respirators for escape purposes. NIOSH has not tested, approved or certified these respirators for all the potential uses. Dow experience has shown that these respirators are more effective than even half-face respirators in escape situations because they can be put into use more quickly. This has been shown in situations where some employees were issued half-face respirators and others were issued mouthbit respirators to work in the same area. The different respirators were issued based on work situations. Employees issued the mouthbit respirators were able to begin using them faster when a release occurred than were the employees with the half-face respirators.

Moreover, Dow has tested mouthbit respirators and found them to be effective for some purposes for which NIOSH has not tested them. As OSHA has written this section, Dow would not be allowed to use the mouthbit escape respirators for these purposes. OSHA should modify this section to allow selection from appropriate respirators if those respirators have been shown to be effective in scientifically valid testing even though NIOSH has not approved them for that purpose.

In response to OSHA's question in the preamble (58 FR 58901) whether OSHA should add an approval procedure for respiratory protection, Dow believes that OSHA should not add such a provision to this standard. OSHA, and industry in most cases, does not have the resources to carry out such a program nor is it necessary to protect employees. A program of this sort would only establish a bureaucracy that would not further health and safety. Instead, OSHA should evaluate such a situation on a case-by-case basis when it is encountered in an enforcement proceeding. Requirements should, and could, be put in the standard which outline the type of data which OSHA would accept to show that a respirator is acceptable even though it is not approved by NIOSH.

(d)(5) This section requires that the employer assure that employees use respirators in accordance with the assigned protection factors (APF) of the NIOSH Respirator Decision Logic. Dow believes many of the NIOSH APFs to be far too conservative. In particular, we believe the APF of 5 for dust masks, as assigned by NIOSH, is too conservative and the APF of 10, as assigned by ANSI, should instead be used. Dow believes that there are other organizations, such as ANSI, that have developed APFs in a manner as scientifically valid as NIOSH. While these evaluations may not have been supplied to OSHA, they have been established in an open peer-reviewed manner in contrast to those of NIOSH and they are available from ANSI. As a result, we believe that OSHA should allow the use of other APFs where there is scientifically valid data supporting the selection.

(d)(6) This section is reserved, however, it is referred to in section (f)(6)(iii)(B)(2), page 58941 of the NPR as having something to do with

assigned protection factors. OSHA should eliminate the reference to this section entirely.

(d)(8) OSHA requires that air-purifying respirators not be used for hazardous chemicals with poor or inadequate warning properties except under certain conditions. See our comments on the definition of adequate warning properties. OSHA must clarify that this requirement and (d)(9) pertain only to work situations and not to escape situations. In escape situations, it is vitally important to quickly don a respirator that will give some level of protection and immediately leave the area. The critical issue is not APFs nor warning properties but how quickly the area can be exited utilizing a respirator that will give at least some measure of protection.

(d)(9) Dow supports OSHA in allowing the use of air-purifying respirators for materials with poor warning properties in certain conditions. We believe however, that this section, together with section (d)(8)(i), where OSHA has permitted respirator usage in a chemical-specific standard, would protect the health of employees utilizing respirators to protect against materials with poor warning properties. We believe that OSHA should require that conditions in either (d)(8) or (d)(9) be met, not that they both be met. Air-purifying respirators should also be capable of being used when the use is strictly precautionary or for well-being and no actual excessive exposure will occur.

(d)(10) This section requires that unknown concentrations of the hazardous chemical will require the use of an air-supplied respirator. This section does not make it clear that this is referring to work situations and not escape purposes. OSHA needs to make this distinction. In an escape situation an employee will jeopardize his/her health and well-being if time is wasted to locate an air-supplied system, e.g. an SCBA system, put it on and evacuate. Again, experience has shown us it is much more protective if a respirator providing at least some level of protection, e.g. a mouthbit respirator, is immediately donned and the area evacuated versus spending the time to don an air-supplied respirator before leaving the area. If reentry is necessary, then proper reentry equipment must be donned after the evacuation has taken

place. In addition, this section does not allow for professional judgment to be used to estimate the concentration of the hazardous material and utilize the appropriate level of respiratory protection if the situation will allow this to occur. We believe that this is appropriate since not every situation can be monitored and in some cases, air-supplied equipment can create a safety hazard.

(d)(10)(iii) Dow is concerned with the reference in this section to "other IDLH" atmospheres if OSHA is referring only to the values as set by NIOSH. This, in essence, allows NIOSH to set exposure levels at which regulatory action must be taken. NIOSH does this without peer-review or comments from the regulated community. An example of this one-sided policy-making, perhaps even regulation-setting, is the recent NIOSH "Pocket Guide to Chemical Hazards", NIOSH publication 94-116. In the preparation of this document NIOSH revised the IDLH values using a combination of those criteria used during the Standards Completion Program and a newer methodology developed by NIOSH. This criteria resulted in the lowering of many, if not most, of the IDLHs set by NIOSH. This action was taken without input of industry or the Industrial Hygiene community on either the criteria which NIOSH used or the values which they chose. The American Industrial Hygiene Association made comments at the early stage of this activity but no input was requested on the final technique used. This action, together with the requirements of this section would require activity to be taken at levels lower than previously required, without comment by the regulated community. We do not believe that Congress meant to delegate this power to NIOSH and therefore OSHA should not require action based on NIOSH values. OSHA should allow industry flexibility to utilize any documented IDLH values using experience, judgment and data.

In addition, OSHA should make clear that when it refers to "atmospheres where the concentration of the hazardous chemical is unknown" it is referring to unevaluated atmospheres, not unmeasured atmospheres. Professional judgment can be used to determine whether full facepiece SCBA equipment is needed based on factors such as irritation levels, etc. In these cases the concentration may not be "measured" but may be "evaluated." Dow

agrees that this can not be done in all cases but OSHA should allow the flexibility to use this judgment, where applicable.

MEDICAL EVALUATION - (e)

(e)(1) Dow believes that any employee who may be required to wear a respirator should be provided an initial medical evaluation which would begin with a questionnaire. We further believe that any employee who is required to wear a respirator on a consistent basis should have a medical evaluation which may or may not include a medical examination depending on the results of the evaluation. That evaluation may only entail a questionnaire. We believe that OSHA's third alternative, 58 FR 58907, is the proper scheme for medical evaluations with a further evaluation carried out on any employee whose questionnaire indicates a need or for those who wear an SCBA for emergency or rescue operations. The physician's written opinion, however, should only be required for those employees who require an evaluation beyond a questionnaire. A written opinion completed for each employee who fills out a questionnaire is an inappropriate use of limited resources. Moreover, a questionnaire may sufficiently indicate that further medical review is not necessary. The questionnaire can be a go or no-go factor evaluated by any trained health professional with the results recorded in the employee's medical record but not requiring a physician's interpretation or written opinion.

OSHA also requires that the employer obtain a written opinion that the employee has any detected medical condition which would place the employee's health at increased risk, etc. Dow interprets this to mean that if an employee refuses to submit to a medical evaluation and the physician will not write an opinion without one, the employee can not work at a job in which the employee would be required to wear a respirator. Dow agrees that certain employees who wear respirators, based on the paragraph above, should be medically evaluated and is asking OSHA to clarify what we are to do with an employee who refuses the medical evaluation.

(e)(3) Dow requests that OSHA change the frequency of medical review from annually to biennially or whenever the employee reports (see next paragraph) unusual difficulty breathing. A medical examination is estimated to cost approximately \$200 to \$300 per employee depending on where it is done, i.e. in-house versus outside the company. Approximately 1000 to 2000 Dow employees in Dow's U. S. operations would have to have annual evaluations. Assuming that an evaluation, not an examination, costs about \$100, at an estimated employee cost of \$40 per hour while the employee is away from the job and assuming only 1000 employees, then an estimated cost could be \$4,000,000. Just to cover the cost of this one aspect of OSHA's proposed standard Dow would have to increase their sales by approximately \$11,000,000 (\$11 million). The benefit is very difficult to perceive versus the burden and cost. Dow manufacturing employees are currently offered medical surveillance biennially as part of our general health and safety and wellness programs. Dow is not aware of any health problems in our employees associated with proper respiratory use. This experience indicates to us that this frequency is sufficient. In the preamble to this proposal (page 58907, center column) OSHA has asked for comments on three alternative versions of the medical evaluation provision. Dow believes that our program of biennial surveillance is appropriate. However, if left only with OSHA's three alternatives, we believe that the first year an employee is required to wear a respirator more than 5 hours each week, a written opinion should be obtained from a physician. After the first year, however, a health questionnaire should be administered (OSHA's alternative 3) to all wearers with a medical evaluation for those employees whose answers indicate a need for the evaluation as well as to all employees who wear an SCBA for emergency or rescue operations. Please note that in this case "emergency" does not mean "escape" from an emergency but means use where reentry into the emergency hot zone might occur. We believe such an approach appropriately aligns costs commensurate to health and safety benefits.

Dow suggests that OSHA rewrite this section to require review of the medical status when the employee "reports" unusual difficulty breathing rather than when the employee "experiences" problems. This would eliminate the employer having to realize that the employee was experiencing the problems

without the employee reporting them. Dow supports OSHA's requirement to review an employee's medical status if unusual breathing difficulties are experienced.

FIT TESTING - PARAGRAPH (f)

(f)(1) This section states that, "••• the respirator fits the employee well enough to reduce employee exposures •••" and the rest of part (f) refers to "tight fitting" respirators. Dow is convinced of the benefits in using Criss Frames as a means of providing corrected vision under full-face respirators. The band "projects under the facepiece seal" which would make it a violation of section (g)(3), however we have found that employees much prefer this type of vision correction device. In addition, we have found that excellent facepiece fit can be achieved with these frames. Dow also understands that Phillips Petroleum has supplied OSHA with a study that shows the fit which can be achieved with these devices. We believe OSHA should allow Criss Frames to be used when proper fit testing can be shown for the employee wearing them.

(f)(2) As with medical evaluations, Dow recommends that OSHA change its annual fit test requirement proposal to biennial, or whenever the employee reports unusual breathing difficulties or if the employee's medical status or facial features or facial shape has changed. We do not believe that employees who are adequately trained in the use of respirators require annual fit testing. In addition, with the fit test criteria now proposed by OSHA, this is a significant resource and cost issue. If annual fit testing is required, Dow would have to carry out an estimated 1000 to 2000 more fit tests each year in our U. S. operations. At an estimated 1 to 2 hours per fit test, assuming this is the time the employee would be away from the work station, and the time involved for the fit tester, recordkeeping, equipment maintenance, notification/scheduling and testing and at an estimated \$40 per hour, the additional cost to Dow would be anywhere from \$40,000 to \$160,000 per year. In order to pay for those additional expenses associated with just this aspect of the proposed rule we would have to increase our sales by approximately \$110,000 to \$440,000 or decrease manpower by 1/2 to 2 persons. Dow presently

carries out biennial fit testing on employees, usually at the time of their medical surveillance, and is not aware of, nor had reported, any employee exposures because of poor respirator fit. Based on this information we do not believe that annual fit testing is necessary and believe, as in our earlier submission (Ex. 36-40), that biennial fit testing is appropriate.

(f)(3) OSHA must make the PortaCount an approved method of fit testing both for this standard and for other existing OSHA chemical-specific standards which, because of the way the test is defined, prohibit the use of the PortaCount. It is difficult to understand why OSHA has not included this as an approved method in this proposal since OSHA uses this equipment to fit test its own employees. Even though OSHA has indicated that only a de minimis citation will be given if a PortaCount unit is being used, this does create credibility problems for OSHA when employers learn that OSHA itself uses the PortaCount. If the PortaCount is not approved, the multitude of employers presently utilizing PortaCounts will be faced with a substantial financial burden, if they decide to not be willing to accept even a de minimis citation, for, we believe, no furtherance of health and safety for the employee.

Dow must clarify a statement made to OSHA in an earlier submission (Ex. 36-40). That statement requested that Freon 12 not be excluded as a test agent when carrying out respirator fit testing. At that time a large number of Dow's fit test booths were equipped with Freon 12 as the challenge agent. Those booths have now all been replaced. This replacement was done over time as the earlier units became obsolete.

(f)(4,5) Dow supports OSHA's flexibility to use alternative fit test procedures if certain criteria are met. We do not believe, however, that it should be necessary to obtain advance approval from OSHA prior to the use of the alternative procedure. If the employer meets the proper criteria as spelled out in Appendix A and has appropriate supporting documentation, that should be sufficient to prove to an OSHA Compliance Officer that the requirements are being met. Therefore, Dow recommends that OSHA delete the language requiring advance notice.

(f)(6) This section requires employers to quantitatively fit test employees who are required to wear tight-fitting atmosphere supplying respirators. Dow believes that OSHA should delete the requirement to fit test pressure demand and continuous flow atmosphere supplying respirators. These respirators are engineered to keep a positive pressure inside the respirator therefore virtually eliminating the possibility of any significant leaks of contaminants into the respirator. In addition we are unaware of any information that indicates a benefit that will justify the resource utilization and cost to carry out this requirement.

(f)(7) Dow supports OSHA requiring refitting of employees when necessary, as defined in this section. In addition, employees should be encouraged during the respiratory protection training sessions or during fit checks after a respirator has been donned, to report any condition which they believe could affect respirator fit.

(f)(8) Dow suggests that OSHA drop the first sentence in this section. We believe that if the respirator becomes unacceptably uncomfortable at any time, not just within 2 weeks, the employee should be given the opportunity to select a different respirator.

(f)(9) Some small locations of large companies may borrow fit testing equipment from a larger site of the company or personnel from a larger site may visit to carry out the fit testing or, as OSHA states, they may rely on outside contractors for this service. Dow recommends that OSHA change this section to clearly reflect that time may be allowed before carrying out quantitative fit testing whether the employer relies on outside parties or on parties from the same company from different sites. We believe that OSHA meant to allow this in section (f)(9) but it is not clearly stated. In addition, Dow believes that the 30 days is not sufficient time to schedule the contractor or equipment in all cases and that 90 days should be given. Training prior to use, including donning and fit checks should give adequate indications of respirator fit until equipment can be obtained.

USE OF RESPIRATORS - PARAGRAPH (g)

(g)(2) See our comments on "unknown" concentrations in (d)(10)(iii) above. "Unknown" should be changed to "unevaluated." Again, in some cases, it is possible to make a decision based on judgment or sensory stimuli and this should not be excluded as a means for determining respiratory protection. Dow supports the procedures which OSHA has listed when entry into the conditions mentioned is considered, with our suggested modification.

(g)(3) Dow supports OSHA's requirement that the employer not permit certain respirators to be worn with conditions that prevent such fits. However, the emphasis on facial scars and dentures should be limited to where they interfere with proper fit and fit testing. As an example, a minor facial scar can project under the facepiece seal without interfering with the seal. OSHA should rewrite the examples as follows:

"••• facial hair that interferes with the facepiece seal, absence of normally worn dentures and facial scars that interfere with the facepiece seal or headgear that projects under the facepiece seal."

In addition, see our comments on section f(1) on the use of Criss Frames.

(g)(4-7) Dow supports these sections as they are important elements in protecting the health and safety of employees. In addition, Dow supports OSHA's proposal to remove the prohibition of the use of contact lenses with respirators. As with OSHA, Dow is not aware of, nor had reported, any increase in exposures nor any problems with the use of contact lenses. In addition, they are easier to use than prescription glasses inside respirators.

(g)(8) Dow supports this provision as with (g)(4-7) as it is an important part of a respiratory protection program as long as the employee notifies the employer. OSHA should include this thought in the final rule so that it reads,

"The employer shall ••• replaced when notified or otherwise becomes aware that they are no longer in proper working condition."

(g)(9) Dow supports this section of the proposal with the exception of the word "ensure." We have commented previously that the employer can not "ensure" but can only "make a reasonable effort to enforce." Dow recommends that OSHA delete the word wherever it appears in the standard.

(g)(10) This section requires the employer to "ensure" that a seal check is performed. This is impossible for the employer to do in all cases because the "employer" is not there. Supervision is not at the work site at all times, sometimes the employee is the only person in the facility. The employee can be trained to do this however the employer can not personally be there to observe and "ensure" every time the employee wears a respirator. This section should be rewritten to state:

"The employer shall make a reasonable effort to enforce that employees •••."

MAINTENANCE AND CARE OF RESPIRATORS - PARAGRAPH (h)

(h)(1) Dow supports OSHA in requiring that respirators be cleaned and disinfected but once again objects to OSHA requiring the employer to "ensure" that it be done. The employer can train and make reasonable efforts but can not be with the employee at all times to "ensure" that it is carried out. OSHA should reword this to read:

"The employer shall make a reasonable effort to enforce that respirators are cleaned and •••."

Ensuring that the respirator is cleaned and disinfected should be the responsibility of the trained user.

(h)(1)(i) OSHA should not require daily cleaning and disinfecting of routinely used respirators. At times respirators are used routinely by the same employee but for only 10 to 15 minutes a day. If the respirators are put in protective bags, boxes or other means are used so they do not get dirty between uses, these respirators can be reused with no adverse health effects to the employee. OSHA should rewrite this section to at least read:

"Routinely used respirators issued for the exclusive use of an employee should be cleaned and disinfected at least once each week and maintained in a clean condition between uses."

(h)(1)(ii,iii) Dow supports these requirements for maintaining respirators in a sanitary condition.

(h)(3)(i) OSHA again requires that the employer "shall ensure that respirators are inspected." This is impossible, and as stated above, OSHA should change this wording to, "shall make a reasonable effort to enforce •••."

(h)(3)(i)(B) Dow supports OSHA's distinction between emergency situations and emergency escape respirators. OSHA could make the distinction even clearer by stating, "All respirators maintained for use in emergency situations •••" rather than just "maintained for emergency situations •••." Emergency escape respirators such as mouthbit respirators, usually stored in the box or bag they came in, do not need to be inspected monthly.

(h)(3)(iii) Dow supports the certification of emergency use respirator inspection by using a tag or label which is only required to be kept until superseded.

**IDENTIFICATION OF FILTERS, CARTRIDGES, AND CANISTERS -
PARAGRAPH (j)**

(j)(1) In this section OSHA has again required that the employer "ensure that all filters, cartridges •••." Dow recommends that OSHA change this to read:

"All filters, cartridges and canisters used in the workplace shall be ••• in service."

(j)(2) OSHA requires the dating of cartridges but because of the size of the label on some cartridges the employer can not do this without obscuring some of the information. OSHA should also delete the word "ensure" and rewrite this section to read:

"The existing NIOSH approval label on a ••• or canister shall not be removed, defaced or the pertinent information obscured while they are in service in the workplace."

TRAINING - PARAGRAPH (k)

(k)(1) Dow supports OSHA's requirement of a training program for employees required by the employer to wear a respirator. There are many instances where there is no potential for excessive exposures to occur but the employees feel more comfortable wearing a respirator, e.g. when there are objectionable odors, but the exposure levels are below the acceptable level. In these cases of voluntary use the employer should not be required to implement a full respiratory protection program. We support OSHA's preamble language on page 58895 and refer to our earlier comments on this issue under "Scope."

(k)(1)(i) As previously stated, Dow objects to the potential of being cited under two different regulations for the same alleged offense. Such opportunities for holding the employer in double jeopardy are inappropriate. In this section the information required by the Hazard Communication Standard is restated and we believe this is inappropriate. OSHA should delete this entire section.

(k)(1)(iii) Dow believes that the instructions detailed by this section will provide the proficiency that employees need to use respirators appropriately and the detail negates the need for annual fit testing. Any problems found during the procedure required by this section could be followed by respirator fit testing. We believe routine annual fit testing would not be needed as a biennial frequency would be adequate as long as there have been no significant changes to the operations, respirator program, etc. See our earlier comments on this topic.

(k)(1)(vi) Dow does not believe that employees need to know, nor will it help them to use respirators correctly, the contents of the standard when it is finalized. Experience with our employees has shown they do not want to

know the details of the standard. They do need to know, however, the existence of the standard, where to get a copy if they want one and the rest of the required training gives them the essence of the contents of the standard. We recommend OSHA rewrite this section to state:

"The existence of this standard (29 CFR 1910.134) and of the written respiratory protection program, their location and availability."

RESPIRATORY PROTECTION PROGRAM EVALUATION -
PARAGRAPH (I)

(I)(1) In the preamble to this NPR (58 FR 58929, first column), OSHA states that it is inherent that problems with protection, irritation, etc. will arise with the use of respirators. Dow disagrees that this is as widespread a problem as OSHA thinks and believes that OSHA's remedy is far too resource-intensive for the problem. A more appropriate method to solve these perceived problems, in the few cases where they occur, is to train the employee well enough to recognize any problem and have the employee report any problem to supervision immediately. These problems can then be dealt with as any problem arising in the overall health and safety program. In addition, a management of change program would also require that, e.g., any process or major equipment change would initiate a review of the respirator program. Employers should not be required to evaluate a number of individual programs, as a proliferation of requirements in different standards would require. In addition "frequent random inspections" implies that there is to be a documented method of visits to the workplace. OSHA should instead require that:

"The employer's respiratory protection program shall be reviewed for proper implementation for all affected employees. The review of the program shall include an assessment of each element required under paragraph (c)(1) of this section."

(I)(2) In this section OSHA requires that employers periodically consult employees wearing respirators. During training, employees should show their proficiency with respirators [see (k)(1)(iii)]. The results of this and the discussions that ensue at that time will indicate whether or not employees are

having problems with respiratory protection. Additional requirements for consultation are not necessary. In addition, it is much more efficient to observe employees working with respiratory protection to determine potential problems than it is to ask about the program.

RECORDKEEPING - PARAGRAPH (m)

OSHA should clarify in this section that the records required by this proposed standard do not need to be kept in one location, e.g. building, as long as they are kept by the employer and are available if requested. As an example, at Dow each employee is given an employee identification number by the Human Resources Department. In the Human Resources Department other employee identification is available, e. g. the employee's Social Security Number, home address, etc. Medical information is retained in the Medical Department, most in a computerized data base. Air monitoring data are retained in the Industrial Hygiene Department. These latter sets of data contain employee identification in the form of the employee number but the Social Security number is found only in the Human Resources Department. This section of the proposed standard infers that all these records must be kept in one central location. For our large sites, that is not possible without costly and unnecessary duplication of records. Dow recommends that OSHA rewrite this section to clarify that records can be kept in more than one area as long as they are maintained and are available as the standard requires. OSHA must also recognize that these documents are confidential and that availability may be properly restricted on the basis of confidentiality grounds. Dow recommends that procedures such as those applied in the Access to Medical Records Standard, 29 CFR 1910.20 be employed here as well. It is also important that OSHA allow keeping any or all of these records on electronic data systems. If not, the burden of maintaining these records becomes extremely large in these days of computerization.

APPENDIX A

Dow does not agree with the requirement that each employee should submit to 3 fit tests to ensure proper fitting of the respirator. We are not aware of any

scientific information which substantiates that three tests are necessary to ensure the health and safety of the employee. The requirements of Appendix A go beyond those recommended by ANSI in their standard and after much debate that committee could not come to a decision whether to suggest 3 tests. Dow's experience with respirator fit testing is that the longer the respirator is worn at any one time, the better the fit becomes, indicating that, in all probability, the first test will result in the lowest fit factor. In addition, since it takes about 10 to 15 minutes to do a single fit test, adding 2 more fit tests would increase the time and expense of doing fit tests by about 30 minutes, about 25% to 50% of the total cost. As a result, Dow recommends that OSHA not require 3 fit tests for quantitative fit testing.

PREAMBLE

In the preamble to the respiratory standard, OSHA has asked for comments on a variety of issues. Dow will answer some of those questions in this section of our comments. Other comments will be found in the pertinent section of the proposed standard above. The comments on the preamble will be listed by page number as in the Federal Register November 15, 1994.

PAGE 58892, COSTS OF COMPLIANCE

Dow believes that OSHA has significantly underestimated the potential costs from this proposed standard. OSHA states that the largest incremental cost is attributable to enhanced requirements for qualitative fit testing. If OSHA does not allow the use of the PortaCount fit testing equipment there will be many employers that will have to purchase new equipment and that will be a significant cost. Moreover, Dow believes that perhaps the largest incremental cost may occur because of the requirement by OSHA of annual fit testing and medical evaluations. For more detailed information see our discussions on fit testing and medical evaluations contained earlier in this submission. In addition, we believe that OSHA has significantly underestimated the annualized cost of the proposed revisions as they pertain to respirator use in IDLH atmospheres. With the recent changes in the IDLH values made by NIOSH, we believe this number should be significantly larger if OSHA retains the NIOSH values as the regulatory requirement.

PAGE 58894, COLUMN 3

OSHA invited comments from industries that anticipate problems with economic feasibility with this standard. In addressing this standard it is estimated that the standard could cost Dow over \$4,000,000 in additional medical evaluations and fit testing if these are changed to an annual frequency, and if wearers of SCBA, other than emergency workers, would have to be fit tested and if 3 fit tests are required instead of 1. This is a significant amount of money that we believe is unnecessary to protect the health and safety of our employees and based on our experiences we see no additional benefits from the requirements.

PAGE 58896, COLUMN 1

OSHA invited comments on whether there were certain low risk respirator use situations which could justify the reduction or elimination of certain provisions in the mandatory respirator program. See Dow's comments on section (c)(1).

PAGE 58910, COLUMN 2

OSHA requested comment on what portions of medical evaluations could be performed by individuals other than licensed physicians. Dow believes that most, if not all, parts of medical evaluations and significant portions of health screening or medical surveillance can be carried out by health professionals other than licensed physicians. It is important, however, that these activities be carried out by properly trained individuals following a protocol. In many cases these individuals will be working under the direction of a licensed physician or the protocol will be written by a licensed physician. We feel it is important for OSHA to recognize that resources available to do this are scarce and therefore OSHA should allow the utilization of health professionals other than licensed physicians to fill the void.

PAGE 58910, COLUMN 3

OSHA requested comment on whether the medical evaluation provisions should be less extensive for "less burdensome" respirators such as positive pressure respirators or single use dust masks. Dow agrees with that philosophy to a certain extent. In the case of disposable dust masks which are

worn strictly to protect from nuisance dusts, we do not think that a complete respiratory protection program is necessary. However, for the same dust mask for a material which has some degree of toxicity, this is not what we would recommend. OSHA should allow some degree of flexibility so employers can make these decisions based on data and the protocols that they have.

PAGE 58912, COLUMN 1

OSHA requested submission of any information regarding instances or details of cases where employees were found to be unable to wear respirators. In our recent respirator fit testing experiences at Dow, we have found very few, in fact only a couple of individuals, who could not be fitted with a half-face respirator. Generally these were females with a very small facial structure. We have found no one who could not be fitted with a full-face respirator.

PAGE 58915/58916

OSHA states, "When QNFT is administered a record of the test recording (i.e. strip chart, computer integration, etc.) is to be maintained." Dow agrees that some record should be maintained however we disagree that a "paper" record must be kept. At present, Dow transfers the test data showing an acceptable fit test from the test mechanism to a central computer system where the data is stored. OSHA should accept this as documentation of the test and this should be stated in the standard. As we discuss elsewhere in this document, OSHA must begin to accept computerization of data and documentation in its standards as that is the technology of today.

PAGE 58930, COLUMN 3

Dow agrees with OSHA's proposal to allow disposable respirators with elastomeric facepieces and high efficiency filters to be used for protection from exposure to asbestos. We believe that these respirators do serve a need in a comprehensive respiratory protection program. OSHA is to be complimented on re-evaluating the asbestos standard in light of new information and proposing to modify the standard. OSHA should re-evaluate all its standards on a periodic basis and propose modifications based on new data.