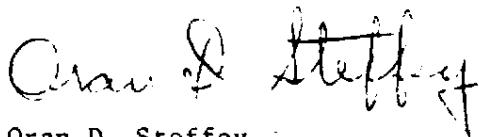


Interoffice Communication

To Safety Directors - All Refineries and Chemical Plants
From Oran D. Steffey - Ponca City, Oklahoma
Date November 22, 1974
Subject BENZENE IN WORKPLACE QUESTIONNAIRE

The attached OSHA Questionnaire was devised by their Office of Planning, Evaluation, and Research to develop information leading to an assessment of the environmental and economic impact of implementation of the proposed benzene standard. Dr. Neill K. Weaver, Director of API, Division of Medicine and Biological Science, has requested us as members to participate in answering the questionnaire to the best of our ability. In order to obtain the best picture, we are requesting that you fill in the answers as applicable to your plant and return the results to our office no later than the week of December 9, 1974. We will compile the results from all areas and return it to Dr. Weaver by December 15, 1974.

Your courtesy in aiding this request will be most appreciated.



Oran D. Steffey
Industrial Hygienist

rla

This questionnaire deals with any workplace where liquid benzene or products containing 1% or more benzene are manufactured, stored, distributed, supplied or accessible to employees.

I. GENERAL

1. What products do you manufacture and/or use that contain benzene?
What per cent of benzene?
2. How does your firm use benzene?
3. Describe the process by which you manufacture benzene or benzene-containing products.
4. How much benzene do you produce or use each year?
5. How many of your employees are engaged in the production of benzene or benzene-containing products?
6. How many company plants/production facilities use benzene or products containing at least 1% benzene?
7. From where do you obtain your benzene or those products that contain at least 1% benzene?
8. What are your target markets for benzene and/or benzene-containing products?
9. Do you have in-house industrial hygienists? Environmental control personnel?
10. Could another product be substituted for Benzene or Benzene-containing products? (Be specific)

II. EXPOSURE (MONITORING)

1. Have you done any area monitoring? Where?
2. Have you done any personal monitoring? Where?

3. What methods and equipment were used? Were they satisfactory?
If not, why not?
4. Do you currently have a monitoring system? If so, describe it,
detailing:
 - type, manufacturer
 - accuracy
 - reliability
 - procurement, installation, operation and maintenance costs
5. If additional monitoring equipment is/may be necessary, what are
the estimated costs of procurement, installation and operation
(including sample analysis). How would samples be analyzed: in-
house, by an independent laboratory, etc.

III. EXPOSURE (PERSONNEL)

1. What are the various operations in your plant during which workers
may be exposed to benzene or products containing 1% or more of
benzene?
2. Do you have estimates of current worker exposure levels? By job
classification? If so, please describe.
3. How many of your employees are regularly exposed to airborne benzene
in excess of:
 - 25 ppm TWA*
 - 10 ppm TWA
 - 5 ppm TWA
 - 1 ppm TWA

*TWA = average 8-hour exposure

Describe the extent of exposure within each job category/classification in terms of the number of workers exposed in each range.

	25 ppm TWA	25-10 ppm TWA	10-1 ppm TWA	1 ppm TWA
Production				
Maintenance				
Transportation				
Waste				
Support				

IV. PERSONAL PROTECTIVE EQUIPMENT

1. Please describe protective clothing or equipment used to protect against possible worker exposure to benzene.
2. Are there any workers in the plant who currently wear respirators for protection from benzene? How long during each 8-hour day? What are their job categories/classifications?
3. How many workers would have to wear respirators if the maximum allowable exposure was:
 - 10 ppm TWA with 25 ppm ceiling
 - 5 ppm TWA with 10 ppm ceiling
 - 1 ppm TWA with 5 ppm ceiling

V. ENGINEERING CONTROLS

1. What engineering steps are currently being taken to control worker exposure to benzene?
2. What additional steps would be required to comply with:
 - 10 ppm TWA with 25 ppm ceiling
 - 5 ppm TWA with 10 ppm ceiling

MCD 000013206

--- 1 ppm TWA with 5 ppm ceiling

3. What are the costs associated with each of the steps and how soon can they be implemented?
4. In terms of engineering controls alone, to what level could benzene exposure be reduced?

VI. MEDICAL SURVEILLANCE

1. Do you presently have a medical surveillance program for employees exposed to benzene? If so, please detail:
 - Who oversees it
 - Availability of in-house doctor and medical staff
 - Biological tests, such as those listed below
 - Frequency of examination
 - Cost per man per examination
 - Number of employees covered
 - Other provisions
2. What would it cost to comply with the following medical requirements?
 - (a) After "date" (six months), the employer shall make available to each employee who is to be exposed to benzene in excess of the "Action level" a medical examination which must include as a minimum the following:
 - (1) A reticulocyte count
 - (2) A serum bilirubin evaluation
 - (3) A urinary phenol evaluation
 - (4) A complete blood count, including hematocrit, hemoglobin, mean corpuscular volume, white blood cell count including a differential count, and platelet estimation from the differential slide.
 - (5) A medical history, which as a minimum shall cover the existence of previous exposures to benzene; blood dyscrasias including genetically related hemoglobin alterations, bleeding abnormalities and abnormalities in the function of formed blood elements; renal disease; liver disease; and alcoholic intake.

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II. EXPOSURE (MONITORING)

1. Have you done any area monitoring? Where?
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MCD 000013208

3. What methods and equipment were used? Were they satisfactory?
If not, why not?
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