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PLAINTIFF'S EXHIBIT
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Bay City Plant Industrial
Hygiene Administrative Procedures

Attached is a rough draft copy of proposed Industrial Hygiene Administrative Procedures for the Bay City Plant. In certain parts of the proposed procedures, the initials of the manager who should pay particular attention to that part are written in the margins.

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CWW/CJS/las

Attach.

cc: Mr. Dave Barrett - CCCTC

ROUGH DRAFT

BAY CITY PLANT INDUSTRIAL HYGIENE ADMINISTRATIVE PROCEDURES

The management of the Bay City Plant is committed to the safety and good health of its employees. All feasible means will be utilized to prevent employee exposure to chemical concentrations that are known to be hazardous to health.

This objective will be accomplished through the following means:

1. Engineering and/or administrative means will be preferential.
2. Temporary use of personal protective devices where necessary.
3. Monitoring of chemical levels in the work place.
4. Counseling of the employees in respect to chemical levels.
5. Training for employees in respect to the chemicals and its effects on them.
6. Medical surveillance.

GENERAL

The Coordinator of Industrial Hygiene/Toxicology and Environmental Affairs for the Bay City Plant is responsible for the overall planning and coordination of the environmental maintenance and industrial hygiene/toxicology efforts. Under the direction of the Coordinator, the Plant Industrial Hygienist is responsible for developing and implementing a plant-wide program to identify and evaluate chemical and other environmental exposures in the work-place which may adversely affect the health, well-being and/or productivity of employees. He participates with the Coordinator in recommending appropriate engineering and administrative controls and developing and coordinating programs to ensure timely compliance with applicable regulations and a safe work environment.

At the end of 1978 and thereafter at least every two years, these administrative procedures will be reviewed to:

1. Insure the Industrial Hygiene program is being carried out in accordance with these procedures.
2. Update, as necessary, to conform with new laws, regulations, and company guidelines.
3. Modify areas of responsibility if desirable.

The review will be conducted by the Coordinator of Industrial Hygiene/Toxicology and Environmental Affairs for the Bay City Plant with assistance from the Company and Plant Industrial Hygienists.

I. Initial Investigation of Airborne Contaminants

The objective of the initial investigation is to determine worst case conditions. The Plant Industrial Hygienist(with input from the Company Industrial Hygienist, Safety Supervisor, and Unit Supervisors) will establish priorities and schedules for sampling and monitoring chemicals. An initial investigation will be made for each substance that in the judgement of the Plant Industrial Hygienist (and Company Industrial Hygienist) poses a potential health hazard to the employee. Occasionally, the initial determination may not require actual air monitoring. In such cases, the logic used in deciding not to monitor will be documented. The Plant Industrial Hygienist (assisted by the Company Industrial Hygienist) will specify both the type and number of samples to be obtained. Generally, a minimum of three long-term (Time-Weighted-Average) samples will be obtained in each operating, maintenance, or laboratory area where there is a potential for employee exposure. The samples should be:

(1) An area sample believed to represent the highest potential concentration.

(2) An eight-hour personal sample of the personnel involved with the highest potential exposure taken under normal operating conditions.

(3) An eight-hour personal sample taken during unusual or upset conditions (unit turnarounds, etc.) of the person believed to have the highest exposure potential - probably a Maintenance employee. The actual number of samples required in the initial investigation will vary considerably depending on the potential hazard of the contaminant and the conditions of use. Generally, Drager tubes (or other gas detector tubes) should not be used in the initial determination.

A series of short-term samples (minimum number of 5 to 7) should be obtained for contaminants with assigned ceiling values and for other contaminants that pose acute exposure hazards.

Air flow calibration of sampling trains should be performed before each use, using an approved calibration procedure (such as the "soap bubble technique"). Whenever feasible, known standards of air contaminants should be collected in the sampling train to test the efficiency of the collecting device and the reliability of the analytical method. Ideally, this procedure should be performed during each sampling study.

Celanese "standardized" analytical methods should be used for analysis whenever available. Otherwise, NIOSH approved or other professionally accepted analytical methods should be used. It is the responsibility of the Company Industrial Hygienist to ensure that common methods are used plant to plant for similar problems.

Actual monitoring and analysis of samples will be conducted by the Plant Industrial Hygienist or under his direct supervision.

A written record of each "initial determination" must be completed by the Plant Industrial Hygienist and should include the following:

a) Industrial Hygiene Monitoring Form (Attached)

b) If air monitoring was not performed, the logic used in deciding not to monitor should be included along with a description of the work area and exposure conditions. Any determinations made without monitoring will be reviewed by the Coordinator of Hygiene/ Toxicology and Environmental Affairs and Company Industrial Hygienist.

c) A report of all employee complaints or commentary on lack of complaints.

Whever possible, photographs should be made in the area being monitored. Pictures should identify where the samples were taken and the location and appearance of the sampling equipment. To insure that a factual picture of the entire monitoring situation is documented, all the information called for on the Industrial Hygiene Monitoring Form must be recorded. If the initial determination is positive, subsequent measurements must be appended to the original report.

II. Frequency of Analysis

If the results of the initial investigation are negative, no additional measurements are dictated during the next 12 months unless there is a change in process, production, or control measurements, which would invalidate original conclusions. Since many of our operations are located

outside, seasonal variations may significantly affect sampling results. Follow-up sampling will be required on an annual basis for certain highly toxic contaminants even though the initial sampling results were negative.

AD → Unit supervision will be responsible for informing the Industrial Hygienist of changes in process, production, or control measures that could significantly change the potential for airborne contaminants. The "initial investigation" should be repeated immediately under the new conditions. It should be emphasized that since there are numerous conditions that affect sampling results, the monitoring schedule will rely heavily on the professional judgement of the Plant and Company Industrial Hygienists.

If the results of the initial investigation indicate that the employee may be exposed to a potential health hazard, the Plant Industrial Hygienist will initiate additional sampling studies along with corrective action to alleviate the potential health hazard. The Company Industrial Hygienist will be directly involved in specifying additional sampling and in developing and implementing necessary control procedures.

Since the objective of the initial investigation is to identify "worst case conditions", it is essential for subsequent monitoring to identify the exposure of the average employee while performing routine day to day operations. This is important for epidemiological research purposes as well as for accurately determining the exposure conditions of all of our employees; otherwise our exposure records will be "overly incriminating" and not an accurate picture of long-term exposure conditions. The number and type of samples required to establish "average" exposure conditions

will vary considerably depending on the chemical operation and will be specified by the Plant Industrial Hygienist (assisted by the Company Industrial Hygienist). Generally "average" exposure conditions should be approximated by at least three 8 hour TWA samples.

III. Record Keeping

EH → The primary OSHA file will be maintained by the Safety Supervisor and will consist of the following:

a) All initial and follow-up investigations for airborne contaminants. The Industrial Hygiene Monitoring Form and other related documentation should be filed by both chemical name for each operating area and by the names of exposed employees. The latter file should be maintained separately from the other personnel files.

b) Tests of efficiencies of mechanical ventilation systems. (Copies of ventilation tests should also be maintained in Plant Engineering files.)

If the measurement shows that exposure exceeds acceptable limits as defined by the Company Industrial Hygienist, the names of all employees who were potentially exposed at the same time should be recorded on the report form. A major objective of the OSHA file is to establish an exposure history for each employee who has a potential for exposure. All records should be maintained for 30 years.

AD → In addition to the above files, each production unit will maintain files pertaining to sampling in their individual unit. This file will allow supervisory personnel to become familiar with OSHA monitoring as it pertains to the individual units and will allow employees access to the records for review. Also, Maintenance Supervision will maintain files pertaining to sampling of their personnel.

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All original measurements and Industrial Hygiene Monitoring Forms will be maintained in the Plant Industrial Hygienist's file for an indefinite time period and for at least 30 years.

IV. Employee Notification of Monitoring Results

It is the responsibility of the Plant Industrial Hygienist to disseminate complete survey results to the Safety Supervisor and other management personnel (including the Company Industrial Hygienist). Individual sampling results will generally not be reported to management by the Plant Industrial Hygienist until the general sampling study has been completed.

EH → is in advance Company [illegible]

Insuring communication of test results to the employee(s) in the work area is the responsibility of the Safety Supervisor. Communication of test results should be done as soon as possible but no later than five days after the results have been obtained by the Industrial Hygienist. In cases of deviation from acceptable exposure, Unit Supervision, Plant Staff, Company Industrial Hygienist and the employee should be informed of test results immediately and of the immediate corrective action being taken. In such cases a review (by the Plant Staff) of the situation will be conducted within 24 hours.

Information should be communicated to the employee as follows:

a) Copies of all completed Industrial Hygiene Monitoring Forms (attached) will be disseminated to the Safety Supervisor and Unit Supervisor or Maintenance Supervisor of the area monitored. The monitoring form will be accompanied by a written interpretative statement of the sampling results (i.e., tell the employees what the numbers mean). The interpretation statement will be provided by the Plant Industrial Hygienist.

LEH → the Industrial Hygienist could be designee.

KAD WFS →

Oral review of the meaning and significance of personal monitoring results will be the responsibility of the Safety Supervisor or his designee. Normally this will be accomplished by the Safety Supervisor or his designee informing the Unit or Maintenance Supervisor. It will then be the responsibility of the Unit or Maintenance Supervisor to inform the employee(s) in the work area. However, the Safety Supervisor has ultimate responsibility to insure that proper employee notification is made. The Industrial Hygiene Monitoring Forms will be maintained on file in the units and be available for employee review at any time.

Extreme care must be exercised to prevent false "positive" or false "negative" results to avoid unduly alarming employees due to bad results or transient conditions. Review should address validity of the analysis, whether or not the sample was truly representative of the work place environment; the reason for the exposure--whether or not it is a simple excursion due to equipment failure or is an inherent process design problem; and, most important, to assess the seriousness of the problem and make sure proper corrective action is taken. In reviewing sampling results, the major emphasis should be in interpreting the meaning of the sampling results and not on the "raw" sampling data. Furthermore, employees should not be informed of individual results (except in cases of deviation from acceptable exposure) until the overall sampling study has been completed. The Safety and Unit or Maintenance Supervisor(s) may request the Plant Industrial Hygienist to assist in communicating information to employees.

LEH → e Industrial ...ist could be ...esignee.

b) The employees will be told by the Safety Supervisor (or his designee) of the results of any completed surveys of exposure to airborne contaminants whether positive or negative. Information contained in the Medical Safety Data Sheet should be discussed with the employees to include symptoms of overexposure and first aid procedures. The employees should be made aware of corrective procedures for handling spills of the chemical and for its safe disposal.

V. Medical Surveillance

The Company and Plant Industrial Hygienists will recommend medical surveillance programs for exposed employees to the Corporate Medical Organization.

?HM EH → The Company and Plant Industrial Hygienists are responsible for follow-up to insure that a recommendation is received from the Corporate Medical Organization. The Plant Industrial Relations Department is responsible

-EH → for insuring that Corporate recommended medical exam programs are carried out.

VI. Training

EH → Training of employees in safe handling of chemicals will be the primary responsibility of the Safety Supervisor. The Plant and Company Industrial Hygienists will assist the Safety Supervisor by providing specialized training material covering such areas as basic principles of toxicoloty, understanding environmental monitoring programs, special health hazards, such as carcinogens and mutagens, and chemical safe handling procedures. Such training material will then normally be presented to the employees by the Safety Supervisor. The chemical safe handling procedures will

HAD → VFS also be covered in the mini-safety meetings. The Safety Supervisor may request the Plant Industrial Hygienist or the Company Industrial Hygienist to participate directly in the training program.

VII. Toxic Substances Control Act (TOSCA)

All compliance activities associated with TOSCA will be coordinated by the Plant Industrial Hygienist.

VIII. Hazardous Chemical Control

The Plant Industrial Hygienist will be responsible for

a) Performing an industrial hygiene review of all new chemicals being introduced into the plants.

b) Compiling toxicological information on all chemicals.

c) Coordinating hazardous chemical labeling systems (to be developed).

IX. Contacts With Regulatory Agencies

All plant initiated contacts with regulatory agencies should have prior approval by the Company Industrial Hygienist and legal counsel. All information sent to regulatory agencies will be sent through legal counsel for approval and attachment of confidentiality disclaimers.

X. Review of Process Changes and New Processes

The Plant Industrial Hygienist (assisted by the Company Industrial Hygienist) will review new designs and process changes and make recommendations pertaining to:

1) Specific equipment and design detail

2) Special protective equipment required

3) Necessary Monitoring

to limit employee exposure to acceptable levels. This review and recommendations should be completed prior to funds approval so that necessary funds can be included to cover the recommended items.

XI. Specific Assignment of Responsibilities

A. Technical Department

1. Responsible for industrial hygiene program development and implementation.
2. Establish priorities for monitoring chemical exposures.
3. Monitor airborne chemicals in the plant.
4. Interpret monitoring results (assisted by Company Industrial Hygienist) and report results to supervision and plant management.
5. TOSCA.
6. Recommend medical surveillance programs for exposed employees.
7. Hazardous chemical review and toxicology.
8. Assist Safety Department in training.
9. Coordinate OSHA compliance with employee exposure to toxic chemicals.
10. Recommend procedures for controlling occupational health hazards (assisted by Company Industrial Hygienist).
11. Coordinate between Celanese and contractors in matters dealing with employee health related to chemical exposure.
12. Review of new designs and process changes from Industrial Hygiene viewpoint.
13. Additional Industrial Hygiene responsibilities can be found in the Industrial Hygienist's job description.

LEH → B. Safety Department

1. Administer medical surveillance exam program.
2. Employee training.
3. Maintain OSHA records of chemical exposures.
4. Assist in establishing monitoring priorities.

5. Use of personal protective equipment including overall respiration program.

6. Ventilation system checks.

HAD → YES C. Line Management

1. Supervision will be responsible for counseling employees on monitoring results and how it affects the employees.

2. Notify the Industrial Hygienist of the need for special sampling due to upset conditions, spills, etc. Initiate corrective action:

   a) Short term administrative action to alleviate employee exposure and enforcement of same.

   b) Long term engineering requests to minimize exposures to come into compliance.

3. Assist in establishing monitoring priorities.

4. Inform Plant Industrial Hygienist of changes in production, process, or control measures that could significantly change the potential for airborne contaminants.

5. Assist Safety Department in insuring that recommended personnel protective equipment including respirators are used.

6. Follow Industrial Hygienist guidance to insure OSHA compliance with employee exposure to toxic chemicals.

XII. Potable Water System

Insuring compliance sampling is conducted on potable water, maintaining all required regulatory records dealing with the system, and assuring compliance with appropriate federal and state regulations dealing with potable water systems will be an Environmental Maintenance function.

Line management is responsible for maintaining the system and associated equipment in good mechanical condition within their area of responsibility. The Utility Department is responsible for the operation of the well and the main potable water supply system.