

Visit 7-14-78

INTRODUCTION

Operations at Rockdale Works consist of a smelting plant with eight operating potlines, a carbon plant for producing anodes, an ingot casting facility, and an aluminum powder plant.

The Rockdale Works employs approximately 1734 people of which 1437 are production workers and 297 office personnel. The hourly workers are unionized under the United Steel Workers.

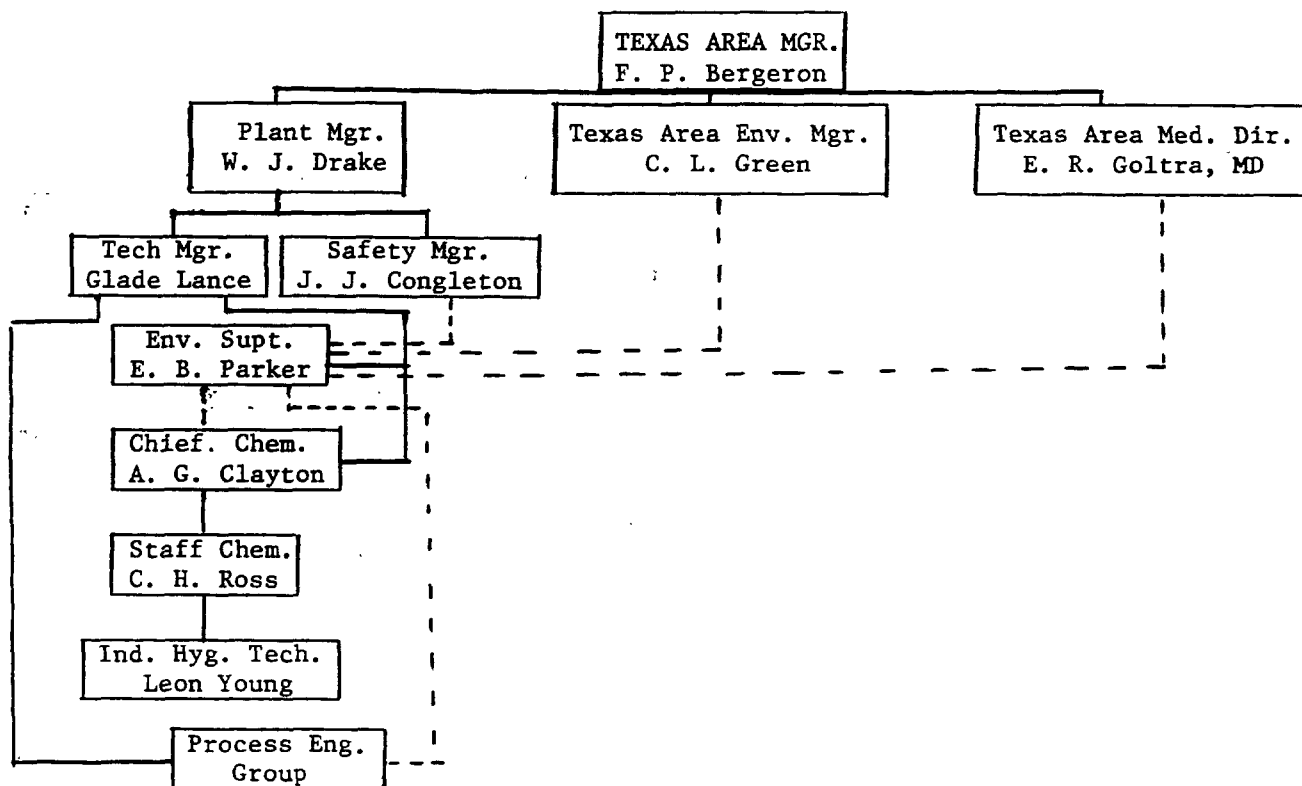
Mr. E. Brooks Parker, Environmental Superintendant, administers the industrial hygiene responsibilities at the Rockdale Works. Mr. Parker, a mechanical engineer by formal training and a certified safety professional, has had no formal training in the disciplines of industrial hygiene. It is Mr. Parker's responsibility to supervise all air, water, and solid waste activities regarding sampling, reporting, and compliance with Federal and State requirements and certification, leaving little time for specific industrial hygiene problems.

Mr. Allan Clayton serves as Chief Chemist and Administrator for the laboratory at the plant. All industrial hygiene related analysis are performed under his supervision. Mr. Clayton has had no formal industrial hygiene training, yet is knowledgeable in various aspects of industrial health and is a member of the American Industrial Hygiene Association (AIHA). Mr. Clayton frequently advises and consults with Brooks Parker in areas of industrial hygiene.

Reporting to Mr. Clayton is Mr. Charles Ross, Staff Chemist. Mr. Ross assists Allan Clayton in his duties in the laboratory and, in addition, performs special analytical work in the areas of air, water, etc., leaving minimum time for industrial hygiene work. Mr. Ross conducted periodic plant-wide surveys and follow-up sampling at Rockdale during the years 1968-1974 but this activity was discontinued because of his increased laboratory duties. Charles received training in various aspects of industrial hygiene sampling and analysis at an Alcoa course given by corporate industrial hygiene personnel in 1964.

The industrial hygiene technician for the Rockdale Works is Mr. Leon Young. Mr. Young, under the direction of Charles Ross, gathers air samples, performs noise surveys and assists the laboratory in analyzing urinary fluorides, and other samples collected by himself or by the other technicians.

Mr. Jerry Congleton, Safety Manager, periodically conducts safety surveys of operations in the plant and notifies Brooks Parker of health-related problems. Good communication relationships exist between the Safety Department, Chemical Lab and Brooks Parker. The following diagram illustrates the reporting relationship existing at Rockdale Works.



Present Industrial Hygiene Activities

Present industrial hygiene activities are conducted on an "as needed" basis with sampling being performed either as a result of complaints or as a result of situations coming to the attention of the laboratory supervisor, safety personnel, or the industrial hygiene technician as they travel throughout the plant. The laboratory supervisor and industrial hygiene technician are aware of existing and potential hygiene problems associated with different operations throughout the plant, however, a systematic survey approach to handling these problems is lacking.

Because the primary function of the laboratory is production related, personnel available to conduct specific industrial hygiene activities are minimal. Charles Ross estimates that approximately 25% of the laboratory's activities are industrial hygiene related. The industrial hygiene technician spends 30-40% of his time performing industrial hygiene duties on a "fire-fighting" basis. It was estimated by Charles Ross that less than 10% of his and Allan Clayton's time is spent on industrial hygiene work.

Activities relating to industrial hygiene include urinary fluoride analysis of all potroom employees on a semi-annual basis. Noise measurements are made upon request to evaluate specific operations which are known to generate high noise levels (e.g., Rodding Room), however, complete annual noise surveys are not conducted.

There exists two committees at the Rockdale Works that are concerned with health matters. The first committee, Rockdale Environmental Health Coordinating Committee, meets on an "as required" basis. Its members are:

- E. B. Parker, Environmental Superintendent
- A. G. Clayton, Chief Chemist
- E. R. Goltra, MD, Texas Area Medical Director
- D. J. Davis, Security
- J. Havins, Production Manager
- H. E. Regan, Texas Area Public Relations Manager
- H. N. Mueller, Safety

The second committee is the Rockdale Joint Safety and Health Committee which meets monthly. Composed of equal representation of union members, the management members are:

J.J. Congleton, Safety Manager
T. J. Randall, Ingot Plant Superintendent
E. R. Goltra, MD, Texas Area Medical Director
E. B. Parker, Environmental Superintendent
J. D. Morgan, Potroom Superintendent
T. L. Suller, Industrial Relations
R. E. Cox, Mechanical Maintenance Superintendent

A complete list of materials and processes in use at Rockdale Works exists. This manual, started some time ago by Charles Ross and compiled in its present form by E. R. Goltra, MD, contains such items as process flow charts; departmental surveys of materials used and their respective health hazards; and a list of materials with information concerning uses, transportation and handling, hazards and control.

Present Industrial Hygiene Capabilities

Leon Young, the industrial hygiene technician, performs sampling and noise measurements on an as-needed basis. Occasionally, Charles Ross ^{assist} ~~accompanies~~ Leon Young in his sampling tasks. Analysis of samples gathered by Leon Young is conducted under the supervision of Charles Ross with the aid of lab technicians.

The laboratory is inadequately equipped to perform most industrial hygiene analysis. Urinary fluorides are assessed by the laboratory using the Orion Electrode technique. Other analysis of samples collected are either forwarded to EHL, Analytical Chemistry Division, ATC or to an outside concern. Equipment in the laboratory includes a Mettler analytical balance sensitive to .1 mg; a Beckman Spectrophotometer 20; an optical microscope with phase contrast attachment; and a Coulter Counter.

The following list is the sampling equipment available at the Rockdale Works. Equipment calibration and maintenance is performed by the laboratory supervisor and technicians.

7 MSA Model G sampling pumps

6 MSA nylon cyclone respirable dust separators

55 impingers

6 bubblers

1 GenRad 1565-B sound level meter

1 GenRad 1562A sound level calibrator

5 Dupont Model D100 LPS Dosimeters plus readout - 90 dBA cutoff

1 MSA Universal pump, with various detector tubes.

1 Model 2100 Ecolyzer 0-100 ppm CO

2 Model GMWL 1000 Hi-Volume samplers

MSA smoke tubes

Combustible gas analyzer - none at laboratory (present at Guardhouse)

O₂ monitor - none at laboratory (present at Guardhouse)

Heat stress equipment:

1 complete heat stress stand

1 Bendix psychron

1 sling psychrometer (Taylor)

1 Bendix hydrothermograph

Audiometry

Audiometric testing is performed on all new employees and repeated on an annual basis. Workers in specific noise areas, e.g., cranemen, are tested twice per year.

The audiometric testing is conducted by one of several nurses who are certified and accredited by HCNC. The corporate noise consultants, HCNC have been active at Rockdale Works for approximately five years. All calibration, testing of the audiometric booth, and documentation are performed by HCNC.

Matters of Industrial Hygiene Concern (caps?)

Noise

A plant-wide noise survey has not been conducted because of lack of available personnel. It is recommended that an extensive noise survey be conducted throughout the plant with a follow-up dosimeter study of those employees in

borderline noise areas. In this way those areas contributing to overexposure may be identified and accorded priority for engineering abatement or personal protection.

A hearing conservation program, as recommended by HCNC, should be strengthened. The educational program should instruct employees as to the importance and proper usage of ear protection. The use of hearing protection should be enforced by the operations' supervisors or foremen.

To best protect employees, and to be compliance with proposed Federal regulations, all efforts should be placed in minimizing worker exposure to 85 dBA or below for eight hours.

Carbon Plant

It is understood that the carbon plant is undergoing a major operational change involving the batch car operations, however, at the present the amount of dust on the floor and airborne constitutes a potential health and safety hazard. Because of the carcinogenic potential associated with the carbon plant CTPV ~~XXX~~ all activities involving housekeeping should be increased. Respiratory protection should be provided for those employees at this location and maintenance personnel, until the dust levels are reduced. Personal sampling of the employees as well as all maintenance personnel who spend considerable time in the plant should be conducted on a periodic basis to document CTPV and total dust concentrations.

A noise survey should be conducted throughout this facility, as most areas appear to be above the present and proposed noise levels. Where engineering controls cannot be installed or when not in use (e.g., noise booth), hearing protection should be provided.

Bath Crusher

ARD 003494

The bath crushing and pad lancing area between lines 4 and 5 continues to be a source of high particulate fluoride. Vehicular traffic to and from the crusher contributes to the dust problem, along with varying wind and weather conditions.

John: Did you get to see the crushing operation in the bath? It needed attention when I last saw it. Yes sarit, man has a blower, Vortex ender etc - well protected
Levi
It is his neighbor's extreme if wind is right that made help.

Also observed in this vicinity, was a bath screening operation generating tremendous amounts of airborne dust. Throughout our observation of this process, high amounts of dust were being blown into the adjacent potroom creating a health hazard and as important, a safety problem. Hopefully, a better means of screening the bath can be developed.

The amount of fluoride dust generated by the bath crusher and screening operation will have a direct effect on the employees' urinary fluoride. Thus, to be in compliance with Federal and State requirements regarding fluoride levels, all efforts should be directed toward reducing the dust generating by these operations.

Potrooms

The atmosphere in the potrooms, from visual observation, was clear. This may be attributed to improved maintenance of pot covers and better work procedures, both of which should be encouraged and ^{periodic} maintenance on the scrubber systems.

Periodic sampling and surveillance should be conducted so as to maintain a good potroom environment. , dust, fluorides, SO₂, CTPV

Frequency
An R/A has been approved for upgrading the lunchrooms adjacent to the potrooms in order to provide a clean area for eating, relatively free from dust and debris.

Ore bucket loading chutes were observed to be occasionally over-filled and spewing onto the floor creating a dust problem in the immediate vicinity. The development of an adequate loading system should be continued in order to eliminate this source of dust.

Pot Repair

Welding fumes containing fluoride and other constituents are of concern in this facility. The presence of local exhaust ventilation to reduce the potential of adverse health effects from the fume is present, however, was not being utilized at the time of our survey. As observed at this location and also in the maintenance shop, the use of local ventilation is minimal. By not employing the local ventilation to welding operations an available control for overexposure to welding fume is being neglected. ~~And~~ Efforts at these locations should be directed toward the useage of ventilation when welding.

General Hygiene Program

The present industrial hygiene activities are conducted in a "fire-fighting" context rather than in a systematic manner. Although ~~most~~ of the areas of health concern in the plant have been looked at from time to time, there is no procedure for routine surveillance and monitoring with follow-up engineering controls to pursue recommendations.

Because of the size of the plant, more manhours are required to allow frequent surveys of the plant and to review work practices. In addition the the 25% time spent by the laboratory group involved with industrial hygiene activities there are sufficient problems to occupy the time of one or two well-trained individuals when considering the need for personal monitoring, consultation, education of plant personnel and compliance with Federal regulations.

Present lab capabilities are insufficient to accomodate the requirements of a comprehensive industrial hygiene program. The utilization of a gas chromatograph and atomic absorption unit are necessary to perform basic hygiene analysis.

To aid in performing a complete noise survey and dosimetry study, consideration should be given to using part-time held such as co-op or summer students. This would allow more time for a hygienist to carry out other hygiene activities to a comprehensive program.

The list of process materials provides valuable information in assessing occupational health hazards, and is continually updated. The plant-wide Environmental Health Committee meetings and Joint Safety and Health Committee meetings are an essential source of information to those involved in industrial hygiene activities. These two sources of information, the list of materials ^{updated periodically} and plant-wide committee meetings, are key elements in a comprehensive industrial hygiene program and should be utilized to their greatest potential.

A comprehensive industrial hygiene program should be established at the Rockdale Works. This program should include periodic surveillance with subsequent personal sampling if so required; complete noise survey of the entire facility; an inspection of the ventilation systems throughout the Works with special emphasis in the carbon plant, and consultation with department personnel with associated education or training.

I think mention should be made that monitoring are required to continually upgrade any materials listing