WALK-THROUGH SURVEY REPORT

Contract #210-77-0096
Courtney and Company
Industrial Painting Contractors
Texas City, Texas

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The Johns Hopkins University
Baltimore, Maryland

and

The National Institute for Occupational Safety and Health
Cincinnati, Ohio

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PURPOSE

The purpose of the walk-through survey of the Texas City Refinery under the painting contractor Courtney and Company is to assess the potential hazards of painting in heavy chemical industries.

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UNION CONTACTS

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GENERAL DESCRIPTION

Courtney and Company are engaged in industrial painting contracts. The contracts consist of two types, either annual maintenance or a "scope of work" contract paid by a lump sum or a cost reimbursement. The company usually has ten to forty sites in operation at one time in six or seven plants. These jobs constantly employ about 80 to 125 men with a five-year employment roll of about 300 men.

The initial meeting was held in the offices of Courtney and Company. A field visit to one of their current work sites was conducted to Texas City Refinery. This site was only being visited as a part of the painting contractor's activities and therefore the company did not provide any access to other areas of the plant except painting nor did they discuss the refining process.

DESCRIPTION CONTRACT PAINTING

Employees predominantly spray paint at industrial sites. The high number of refineries and chemical plants in the local areas dictate that most of their work is done in heavy chemical industries. Their activities consist of the usual cleaning of surfaces by sandblasting, not chemical stripping. This is often done inside tanks which have contained dangerous chemicals. However, it is estimated that less than 10 percent of their work involves closed spaces. Often the lining or outside of these tanks require special coatings such as fiberglass or fireproofing but these are infrequent activities.

The typical activities of Courtney employees in industrial painting include sandblasting and surface preparation of all painted surfaces in a plant. These may be on pipes, tanks, rooms, trim, and buildings and thus preparation will differ by site. All men are trained to sandblast using silica sand, not shot blast. Sandblasting was begun in 1953; before that grinding, chipping and hammering were used to remove surface material. In some instances, the latter methods must still be used when materials polymerize on surface of tanks and provide difficult penetration as with styrene. Pipes and other equipment are also prepared with sandblasting only when necessary. A special sandblasting facility with ventilation is located at the site of the Courtney offices. It was not in use at the time of our visit. Apparently pipes are frequently prepared there.

The paints used in these operations consist of vinyls, two component epoxies and inorganic zinc primer. The usual method of application is by air spray in which the man can apply 10 to 20 gal./man/day. All primers are applied in this way. Airless spray is also used on some surfaces and with this method the painter can apply 10 to 150 gal./man/day. The use of epoxies goes back 7 to 10 years; prior to that vinyls were used almost exclusively from 1953 on. The material is mixed individually by the man on the job. Various suppliers are represented as seen in the Material Safety Data Sheets such as Ameron, Napko, Mobil and Carbolin. Occasionally exotic materials such as fireproofing are used but their use is infrequent. Occasionally fiberglass is applied to the inside of tanks. These materials consist of fibers in an epoxy coating. At one time fireproof coatings may have contained asbestos fibers but not currently.

The field visit to the Texas City Refinery did not reveal any remarkable activities as operations are terminating at that plant. Only four painters were actually painting. The others were cleaning up and removing equipment. One painter was using a brush to paint on a material which detected fluoride leaks. Three others were spray painting. All were painting in the open air and wore half-face cartridge respirators. The cleaning of buckets was done by washing with solvents in the open air. Fireproofing had been used on zinc pipes at this plant.

DESCRIPTION OF WORKFORCE AND PERSONNEL RECORDS

The current workforce consists of about 80 to 125 painters who are located at various sites in several industries. There is marked seasonal change in the numbers. The company may have employed about 300 men in the last five years. No women painters are included.

The company has several offices and individual employment records are kept at each individual site. The records at the local office are kept for 5 years. The local union, from whom Courtney hires, has records going back into the fifties. Both records include name, birth date and Social Security number. The union record indicates the contractor to whom the man is sent for hire. The contractors' records would allow one to estimate exposure by knowing job site to which they were assigned and paint to be used at that site. It is recognized that this does not guarantee that the man was not transferred after assignment.

The union records have a longer history than that of the contractor with cards for four years and a ledger prior to that time. They also have Health and Welfare Reports of illnesses and benefits claims going back to the fifties. Records of deceased members may be purged but this is not done systematically. It is estimated that there are currently 400 members of the union with half having been in the organization 20 or more years. The average age is about 48 years. It may be possible to establish a cohort of about 600 workers in that union over the past 20 years.

MEDICAL RECORDS AND PROGRAM

There are no medical records kept by the contractor except for those which relate to on-job injuries which might involve Workman's Compensation. If illness or injury occurs while working, the employee is treated at the local clinic. Occasionally the medical facilities at the plant where the contractor is located will provide coverage.

The union does have records of Health and Benefit Claims through their insurance. The forms give diagnosis, hospital and date. These have been retained at local headquarters where the program is managed.

Few of the painters have had any screening. There is an effort, at present, to have these workers screened with X-rays, pulmonary function tests and blood tests. A suspicion of excess anemia among local union painters stimulated the current visit. Further examination of this episode suggested that most of the cases were explained and were not job related.

SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

Employees of Courtney have to observe the safety standards of the contractor as well as the plant in which they are operating. For sandblasting, all men have earplugs and sandblast helmets. Air-fed hoods have been used since 1967.

The procedure for painting in tanks or closed spaces are standardized. The company must "sniff" the vessel to be sure it is free of gas. Vessel attendants are kept at the outside with rescue equipment available at entrance. For ventilation, exhaust fans and Copus blowers are used. All men are provided with air-supplied or airline hood. No engineering controls are available.

Some companies have special rulings such as Texas City Refinery where no beards or facial hair was permitted on visitors or workers since it would reduce the efficiency of respirators. Half face cartridge respirators are required for all painters both by Courtney and the company visited.

No other safety or industrial hygiene programs are required by Courtney. Some industrial hygiene testing may be done by the companies when the contractor is working.

REPRESENTATIVE COATINGS

Primers

Zinc Rich primer Mobilezinc uni-pack
Polyol silicate
Zn dust plus colorant
Alcohol, glycol ether

Finish

Napko Epoxycote "E"
Epoxy ester
Napk #212 or #227

CONCLUSION

Industrial hygiene problems are unique in this group since they have frequent exposure in high risk chemical industries. They also have some exposure to closed spaces. However, few men are involved at each site.

The contractor records are inadequate to study risks as the population is too small. It might be possible to study these painting locations by following an identified cohort of union members.

RECOMMENDATIONS

This site is not recommended for further study.