



Inter Office

Personnel and Organization Staff
July 5, 1983

To: C. F. Rush

cc T. J. Harmon
D. M. Josef, M.D.
J. Pettigrew
H. T. Procter

Subject: Health and Safety Audit of Lorain Assembly Plant

The combined health and safety audit of Lorain Assembly Plant was conducted on June 8, 9 and 10, 1983. The team included Ms. C. B. Gdula, R.N., Corporate Medical Administration, Mr. J. W. Dillard, Corporate Safety Engineer, and Mr. R. L. Wabeke, Supervisor, Industrial Hygiene Services. Mr. J. Pettigrew, Division Safety Engineer, attended the audit. The audit consisted of an entrance interview, audit and closing conference. We regret that a plant walk through was cancelled by the Assistant Plant Manager because of his time constraints. Individual plant tours were made by the Corporate Safety Engineer and the Supervisor of Industrial Hygiene Services.

MANAGEMENT SUMMARY AND RECOMMENDATIONS

Summary

- . The medical staff is knowledgeable and efficient. Patients are processed through the Medical Department quickly. Nurses are given considerable respect and admiration by other employees.
- . The Medical Department is well organized and time is well utilized. The plant physician sees many patients and evaluates many jobs.
- . The nursing staff is below corporate staffing recommendations. Per corporate standard, there should be one R.N. to six hundred employees.
- . Medical surveillance exams are being properly conducted. Because of the recent selection and scheduling of several departments for audiometric exams, a large number of these will be shown as overdue. These audio exams are currently being performed.
- . Storage of records and supplies is inadequate. Due to the small facility, records and supplies are stored in any available location -- treatment rooms, etc. A number of records are stored in the plant with other departments' records (Compensation and Personnel). This procedure does not assure confidentiality and, in addition, some records have been stolen.

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Summary (continued)

- . Extremely good rapport is present with medical and other departments of Industrial Relations and the Union.
- . An in-plant alcohol/drug abuse program is being successfully conducted at Lakeland Institute.
- . With the exception of five minute safety talks, documented training is provided at required intervals.
- . Safety Non-Technical Bulletin #12, Factors to Consider in Staffing Safety Engineers, should be reviewed as the current staffing of safety engineers is inadequate in view of current production levels and plant employment population:
- . Plant management support and involvement in the safety program is commendable.
- . General and local exhaust ventilation deficiencies are present.
- . Potential for exposure to asbestos fibers exists in the hi-lo and tug tractor maintenance area because of unsatisfactory dust cleanup practices.
- . Bird droppings in the plant constitute a potential health problem.
- . Hearing protection devices are inconsistently worn in hazardous noise areas.
- . Some employees are wearing improper respirators or, in some cases, no respirators for specific hazardous exposures.
- . Inadequate posting of confined space entry and corrosive chemical use areas was identified.
- . A portion of the Caustic Building is under-illuminated.
- . Some employees are wearing inappropriate eye protection when handling corrosive chemicals.

RECOMMENDATIONS

Medical

- . Addition of nursing staff to conform with the corporate standard is recommended. When case load exceeds 50 cases/nurse, additional staffing should be considered.
- . Expansion of the medical department, as planned in 1979, should be considered to allow for proper storage of records and supplies.

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RECOMMENDATIONS (continued)

- . Form #5130's, the Case Record of Occupational Illness and Injury, should be filed separately - not in the medical jacket. Through this method, confidentiality is preserved and records remain at the location where the injury or illness occurred.
- . Dispose of outdated narcotics in proper manner.
- . Provide double lock containers for control drugs.
- . Send inactive records to Highland Park as outlined in the Corporate Records Retention Manual.
- . Perform daily biologic audiometric check. Obtain background sound measurement of audio booth. Maintain log of these procedures.
- . Post "Standards of Protection Against Radiation" in x-ray.
- . Replace missing emergency lights.
- . Illness and injuries that are treated with prescription medication must be reported on the OSHA Log.
- . Locate and correct oxygen leak present in wall between EKG and storage rooms.
- . Purchase of an automatic x-ray processor would be time efficient.
- . Purchase of pocket panic button for nurses for personal protection and emergency assistance, if needed.
- . Suggest purchase of numerous emergency supplies. Basic drugs that are necessary to treat all medical emergencies according to the standard of medical practice expected in the community should be standard in the medical department. The purchase of a defibrillator and training of the medical staff in its proper use is recommended.

Safety

- . Five minute safety talks must be given on a periodic basis and documented.
- . Additional emphasis must be given to machinery guarding and utilization of existing machinery safeguards. This should include development and implementation of a program requiring daily inspection by supervisors, periodic inspection by the safety engineer, and a means to assure that all new and reconditioned machinery and equipment is properly guarded before use.

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RECOMMENDATIONS (continued)

Industrial Hygiene

- . Correct general and local exhaust ventilation deficiencies (see attachment).
- . Wet clean up methods and a vacuum cleaner dust removal must be utilized in the hi-lo and tug tractor maintenance area. Brake maintenance employees must be placed on the asbestos medical surveillance program if exposures have exceeded the OSHA standard.
- . Eliminate the bird population in the plant.
- . Enforce the wearing of hearing protective devices in noise hazardous areas. Prohibit the wearing of radio headsets. Measure noise levels at the exit of the van water test spray booth.
- . Ensure that appropriate respiratory protection is used and worn properly. A written respiratory protection program must be developed in accordance with OSHA and Company directives.
- . Confined space entry and corrosive chemical handling areas should be clearly posted.
- . Poor lighting of the catwalk near the lye tank in the Caustic Building must be improved.

Specific safety, medical and industrial hygiene details are included in this report as attachments.

Your time bound action plan for correcting any deficiencies and responding to the recommendations should be submitted to Carole B. Gdula, R.N., Employee Health Services Department, Suite 900, Parklane Towers West, by August 5, 1983 and, if necessary, each 30 days thereafter until all items are corrected.

Duane L. Block M.D.

Duane L. Block, M.D.
Medical Director

Attachments .

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Lorain Assembly Plant
Medical Overview of Operation

The medical facility at Lorain Assembly was the original one designed in 1959 for a population of 3,000. Plans for expansion were made several years ago but these plans were postponed due to economic conditions.

Current plant population is about 6,000. The medical department is extremely congested. Supplies and records are stored in various areas, including patient treatment rooms. EKG's are taken in a small room used for supplies and inactive record storage. Numerous medical records have been stolen while patients waited for EKG's. Splints, supplies and a wheel chair are stored in an emergency treatment room. The suture room has an outside entry that the ambulance uses.

The addition of nursing staff to conform with the corporate standard of one R.N. to six hundred employees is recommended. When the case load exceeds 50 cases/nurse, additional staffing should be considered. The current plant population and patient census is:

<u>Shift</u>	<u>Hourly</u>	<u>Salary</u>	<u>Total Population</u>	<u>Case Load</u>
# 1 Shift	104	7	111	100
# 2 Shift	2,873	329	3,202	200
# 3 Shift	2,319	182	<u>2,502</u>	150
			5,814	

Nursing staff are scheduled at 10 hours/day at the hours:

#2 Shift	1 R.N.	5:30 a.m. - 4:00 p.m.
	1 R.N.	7:30 a.m. - 6:00 p.m.
#3 Shift	1 R.N.	4:00 p.m. - 2:30 a.m.
	1 R.N.	6:00 p.m. - 4:30 a.m.

Lorain Assembly Plant views extended medical leaves, mainly psychiatric related, as the most serious problem. During March, 1983 the plant had 37 employees on medical leave due to "nerves" (3 of these have been on medical leave since 1979). Labor Relations/Hourly Personnel state the employees become ill when reduction in force is anticipated and recover when funds expire or the plant reaches the employees' recall seniority. The plant expressed a need for advice in correction of this problem.

Charting on records is well documented. Multiple cases were treated with prescription drugs that were never reported on the OSHA Log. Other omissions on the Log were occupational dermatitis cases and injuries with chipped teeth.

Form #5130, the Case Record of Occupational Illness and Injury, is filed in the medical jacket. Physician reports for medical leaves are sent directly to Dr. Josef. However, the personnel department has access to the medical jacket when determination for justification of time is necessary; this practice is a breach of medical confidentiality.

An incident occurred 6/9/83 where a cleaner entered medical via use of his own key. The night nurse was leaving the x-ray room and preparing to lock the facility when the cleaner appeared. Management was unaware as to the possession of the cleaner's key or his need for entry at that time. Closer control will be instituted.

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We have found that early opinions on psychiatric cases are an invaluable means of retaining control of cases. Rehabilitation hospitals are useful in evaluating psychiatric problems. We would encourage the use of hospitals in the Cleveland area, e.g. Cleveland Clinic, for third party consultations.

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Lorain Assembly Plant
SAFETY PROGRAM REVIEW AND RECOMMENDATIONS

This review was not an in-depth inspection of each operation but rather a general program review and plant walk-through to determine the adequacy of plant programs and to observe work practices and conditions within the plant for compliance with established Company, division and governmental safety program guidelines. Messrs. D. Obringer, Safety Engineer, and J. Pettigrew, Division Safety Engineer, accompanied and provided assistance to this part of the review.

Aspects of the plant program which were impressive and which are concurred in as being important follow:

1. Documented training in the following subjects has been provided at the designated intervals:

- . Power Lockout
- . Boxcar and Bulkhead Safe Practices
- . Servicing of Gas Fired Equipment
- . Confined Space Entry Safe Practices

Further review of safety related training programs revealed that "Safety Review for Supervisors" was presented to supervisory personnel during 1982 downtime and that "Messages" was presented at individual group meetings as well as continuous viewings within the plant cafeteria at lunch periods.

2. The excellent safety program support and involvement by you and your managerial staff members are to be commended. Examples of support and involvement are:

- . Participation of the Assistant Plant Manager, Industrial Relations Manager, and safety engineer in the Good and Welfare Committee to resolve health and safety issues.
- . Plant safety tours performed by you and the assistant plant manager.
- . Periodic presentations by the safety engineer and routine safety presentations by the Industrial Relations Manager to the plant Operating Committee.

3. Housekeeping throughout the plant was very good and no permanent encroachments were observed in the well designated aisles.

4. Inclusion of the safety engineer in the review/approval of new equipment and processes or modification of existing system is to be commended. Discussion with Mr. Obringer indicated that the plant uses a plant developed "Tooling Check-Off Sheet" for documentation of this program.

In addition, many basic program elements have been implemented to provide a safe work environment for employees of the Lorain Assembly Plant.

Individual safety items observed during the plant walk-through which require local actions were noted by Mr. Obringer. Additionally, a cassette tape

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detailing my review findings will be forwarded to Mr. Obringer for plant retention. The following items and recommendations, while not prioritized by number, are considered necessary for a more effective program at the Lorain Assembly Plant:

1. Currently, the plant is operating two ten-hour production shifts six days a week with a plant population that approaches 6,000 employees. The plant safety program is being administered by a single safety engineer on the day shift and on the afternoon shift by a labor relations representative on an as needed basis. Attached Industrial Relations Non-Technical Safety Bulletin No. 12, Factors To Consider In Staffing Safety Engineer Positions, provides the guidelines for safety engineer staffing requirements. Based upon these guidelines and current production schedules, it is strongly recommended that additional full-time safety engineering personnel with demonstrated capabilities within the safety engineering profession be assigned to administer the Lorain Assembly Plant safety program.
2. Additional emphasis must be given to machinery guarding and the utilization of existing machinery safeguards. Examples to be corrected are:
 - a. The use of a single two-hand controls for work stations with two employees potentially exposed to equipment operation near Columns NN-19 and JJ-25.
 - b. The use of a single control button to close three clamping fixtures for spotwelding operations at Column NN-19.
 - c. The trim press located at Column O-13 requires ring guards and appropriately color coded actuation buttons for the two hand controls.
 - d. The Cincinnati-Milacron spot welding line (Column LL-20) and other automated lines have inadequately guarded points of operation and/or inadequately restricted means of access.
 - e. Numerous power transmission guards were removed and lying adjacent to the drive systems within the second floor area of the Commercial Department.
 - f. The Niagara power shear located in the sheet metal shop is not of the anti-repeat type and does not have guarding for the cutter blade, hold down clamps or the foot treadle.

To improve upon the plant machinery guarding program, the following items are recommended:

- a. A program should be developed and implemented to require daily inspections by each supervisor of equipment and conditions within their area of responsibility. Results should be documented and appropriate corrective action(s) taken to eliminate noted discrepancies.

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- b. A program should be developed and implemented to require the safety engineer to perform periodic detailed inspections of machinery, processes and modifications when they occur.
 - c. As an interim program objective, the plant should continue correction of machinery guarding deficiencies as noted in Mr. Pettigrew's July 1, 1982 Safety Program Review correspondence.
3. The formalized five-minute safety talk program has been discontinued as a part of the routine safety program. This program should be reinstituted and appropriately documented.

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INDUSTRIAL RELATIONS BULLETIN

DATE	BULLETIN TITLE	RESPONSIBLE DEPT	BULLETIN NO
06/06/83	Safety - Non-Technical	Employee Health Services	12
TITLE	SUBJECT	DATE	
Factors To Consider In Staffing Safety Engineer Positions	Nov		

This bulletin is intended to provide staffing guidelines for safety engineer positions to assure that each component is staffed with the number of personnel required to comply with all government regulations and effectively administer Company policies, programs and procedures. Functions of a full-time safety engineer may include performing environmental sampling and monitoring materials usage, but generally exclude fire control and security responsibilities. It is recommended that:

All Company facilities, regardless of the number of employees, have an individual who is assigned employee safety responsibilities for the plant. This duty may be full or part-time as circumstances warrant.

Plants with 600 or more hourly employees have one full-time safety engineer. Facilities with fewer than 600 hourly employees consider a full-time safety engineer where extensive monitoring is required due to potential health and/or environmental hazards.

Depending upon the nature of operations, an additional safety engineer be considered for the day shift (#2) with a population of 1,500 or more hourly employees.

An additional full-time safety engineer be considered for other shifts with 600 or more hourly employees. Considering die change schedules, stamping plants should evaluate the need for a safety engineer on the #1 shift even though population may be below 600.

Plant size, complexity and nature of operation, hazard of manufacturing or assembly processes, and potential health and/or environmental hazards are among the many factors warranting consideration in determining safety engineer staffing.

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Lorain Assembly Plant
Industrial Hygiene Audit

An industrial hygiene audit was conducted at Lorain Assembly Plant on June 8-10, 1983. The purpose of this audit was to evaluate environmental conditions, work practices, and processes in the plant that could adversely affect employee health or contribute to worker discomfort. Mr. Dan Obringer, Plant Safety Engineer, very cooperatively assisted during this audit.

Elements of the audit included appraisal of general plant and process ventilation, chemical handling practices, air quality, hearing conservation, respiratory protection, corrosive chemical vision conservation practices, illumination, skin protection practices, sanitation, and heat stress protection.

Overall, the plant's industrial hygiene programs are excellent. Noteworthy are the local exhaust ventilation systems and control of employee exposures to airborne contaminants. Exposures to overspray mist and solvent vapors in paint booths were controlled as was exposure to fine-wire welding fume and gases.

Deficiencies in some industrial hygiene programs were noted, however, and should receive attention.

Ventilation

Whereas overall plant ventilation is excellent, a slight negative pressure condition exists. While insignificant during warm months when large doors are open, this could be a problem during winter leading to breathing zone air quality problems. Plant engineering should assure provision of sufficient makeup air to balance all supply and exhaust systems to within ten percent of each other.

Consideration should be given to installing silhouette slot exhaust ventilation systems at the exit of A and B booth enamel drying ovens. Excessive paint emissions and volatile organic hydrocarbons are emitted producing stains on ceiling and walls in the area. This is an issue of employee concern.

Engine exhaust emissions (especially 5.0 liter EO) at the passenger roll test appear excessive in spite of substantial dilution ventilation from a nearby open bay door. It can be expected that this condition will worsen during winter. A recent industrial hygiene study in this area has documented employee exposures to air contaminants. Improved ventilation is indicated for this area. The grillwork on the exhaust system at floor level on the south wall should be periodically cleaned of the substantial dust accumulations.

Two exhaust ventilation systems were inoperative in the Paint and Oil House. One of these was at the laboratory testing area and the other was in the large paint tank mixing area. It is imperative that these systems operate at all times to control combustible/flammable solvent vapors and employee exposures to toxic airborne contaminants. Installation of an alarm system is suggested to indicate when ventilation systems malfunction.

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An excessive amount of water vapor is emitted from the wash booth at V-22. Better enclosure and ventilation is indicated to control excessive humidity and employee heat stress discomfort in adjacent work areas.

Local exhaust ventilation at the commercial line wheel rim spray painting operation was poor. Paint overspray mist and vapor was insufficiently captured requiring the operator to wear a respirator. It was stated that inappropriate solvents had been selected for paint formulation that day leading to extreme eye, nasal, and upper respiratory irritation. Ventilation must be sufficient to control exposures in event of improper paint solvent mixing. Installation of a ventilated drying tunnel is indicated to capture fugitive solvent vapor emissions from wheel rims as they dry and exit the spray booth.

Asbestos

Potential for exposure to asbestos fiber exists in the hi-lo and tug tractor maintenance area. A vacuum sweeper approved for asbestos fiber should be purchased to remove residual asbestos from brake drums before new brake shoes are installed. This vacuum sweeper should be made available to maintenance personnel who repair and install new brakes in the hi-lo and tug tractor vehicle maintenance area. Employees must be instructed not to use compressed air wands to blow residual asbestos dust and fiber off brake shoes and drums. Wet methods, vacuuming, respiratory protection, and ventilation must be used to control exposure to asbestos. Brake maintenance employees should be on the asbestos medical surveillance program.

Illumination

No large area deficiencies in plant illumination were observed. However, the catwalk adjacent to the lye tank in the Caustic Building is poorly illuminated. Tripping hazards and corrosive chemicals in this area mandate better lighting on this walkway.

Sanitation

Overall plant sanitation and hygiene is excellent. No deficiencies other than minor housekeeping were noted in cafeterias, food preparation areas, canteens, locker rooms, and washrooms/toilets. There is an excessive bird population in the Butler Building. Until birds are eliminated, wet cleaning of floors is indicated to minimize airborne spore distribution from bird droppings. Even though this storage facility is not occupied full-time, steps should be taken to control roosting in this area. In our experience, flashing strobe lights, sirens, chemical deterrents, and other commercially available techniques have little effect. It is recommended that someone from plant security kill several birds in the building with an air powered pellet rifle. Carcasses should remain on the floor for the shift. Typically, birds will not return. In our experience, other ventures with commercial pest control agencies are expensive and usually unsuccessful.

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Hearing Conservation

There was inconsistent use of hearing protectors at locations where noise dose was excessive. For example, an employee in the rough grind booth was not using protection. All employees must consistently wear approved muffs or plugs at designated hearing conservation locations. Several employees were observed wearing radio headsets although not in hearing conservation areas. Concerted management effort must be undertaken to eliminate use of these devices in compliance with issues raised in Industrial Hygiene Bulletin No. 36. Noise exposure should be reevaluated at the exit of the van water test spray booth and at the exit of the passenger water leak test spray booth at Column G-3. The noise dose at these operations appeared excessive for employees involved in hand wipe-off operations. If indicated, they should be included in a hearing conservation program.

Respiratory Protection

Appropriate approved respirators are available for employee use. However, all elements of a respiratory protection program in compliance with OSHA standards and industrial hygiene guidelines are not in effect. Specifically, written programs must be developed for respirator use areas, and a procedure must be established to assure that the correct respirator is dispensed to employees for the air contaminants of concern. In this respect, it should be noted that the paint sprayer at the commercial rim line was using a particulate respirator for protection against paint solvent vapors. He was not aware that the respirator provided no protection against these contaminants. This serious deficiency must be corrected. Furthermore, the employee did not use both straps on his respirator. This prevents an effective face-to-mask seal. The importance of a good seal must be reemphasized during respirator education and training sessions. Provision of organic vapor respirators to maintenance personnel in the Paint and Oil House is advised during swabbing and cleaning operations. Brief exposures to high concentrations of solvent vapor in this area could produce transient narcosis with possible injury to employees.

Vision Conservation

Eye protection of choice is the chemical splash goggle which is superior to a face shield for vision conservation when handling or working near corrosive chemicals. Employees must be instructed to wear goggles when splashing of corrosive chemicals could occur. Such areas should be so designated. The emergency chemical eyewash fountain in the Caustic Building collapsed during testing. Water supply must be restored to this fountain and corroded pipe replaced. It must be emphasized that eyewash fountains are secondary to consistent use of splash goggles in vision conservation areas. Employees who handle strong acids, alkalies, oxidizers, corrosion inhibitors, microbiocides, and scale removers must wear splash goggles. We see little need for face shields in chemical handling areas at Lorain Assembly Plant.

Air Quality

Other than conditions mentioned in recent industrial hygiene reports, no obvious air quality problems were noted with exception of solvent vapor in the

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Paint and Oil House. It is advisable to document exposures to solvent vapors in the paint kitchen. Arrangements will be made to have plant personnel conduct this monitoring. Air sampling is also recommended to document solvent vapor exposures of maintenance employees who clean paint skimmers and sludge filters.

Confined Space Entry

Confined space labels on top of paint mixing tanks are illegible. Solvent has washed paint off labels as a result of repeated cleaning. Labels should be relocated on the paint mixing shaft motor housing or on the side of each tank.

Skin Protection

There was no evidence of excessive dermatitis at Lorain Assembly Plant in spite of potential contact with a wide variety of dermal irritants and sensitizers. One employee installing upper rear deck insulation on the passenger trim line at T-11 has skin irritation which might be associated with handling this fibrous glass product. This was discussed with Dr. Josef. Industrial hygiene practices for control of fibrous glass dermatitis as specified in Bulletin No. 31 should be reviewed. If these measures are unsuccessful, it is recommended that the supplier be contacted to topcoat their product so fibers are not released.

Heat Stress

No significant heat stressful work environmental conditions were observed. The area adjacent to the exit of enamel paint baking ovens was brought to our attention as an area of potential heat stress. Employees do not work in this immediate environment and, unless maintenance personnel must spend long periods at this location, we see no need for environmental controls. Most heat at this area is radiant and would not be adequately controlled by exhaust ventilation.

The Industrial Hygiene Services Section will, as requested, assist in implementing these recommended industrial hygiene programs at Lorain Assembly Plant.

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