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MAILED
5/21/96

Interoffice Memorandum

PLAINTIFF'S EXHIBIT
H&G-55

To: **Ben Kennedy**

From: **Lori Yeager** LRY

Date: **May 17, 1996**

Subject: **Industrial Hygiene Survey**

Attached is a copy of the report from Janice Turner of Zurich-American Insurance Group concerning the Industrial Hygiene Survey conducted on April 10, 1996. To summarize, two areas of concern were found during the survey. One such area is the sand mixer where silica-quartz levels exceeded both the OSHA PEL and the ACGIH TLV levels. Formaldehyde levels were also a concern around the warmbox machine. Better ventilation systems are recommended for both areas. Please see attachment two for ventilation guidelines.

Noise levels in all areas were high, especially the strainer core machine and the large shell core machine. I suspect the reason the maximum decibel levels were so high for several of the individuals, because the are using an air hose to remove debris from their uniforms before lunch and at the end of their shift. We should stop this activity soon to reduce noise levels in these areas. Mandatory hearing protection should continue to be required in the coreroom. However, I would strongly recommend mandatory hearing protection for the mixing room and maintenance, as well.

Please discuss the results with me as soon as you review the document, so we may establish a plan for improving these areas quickly. As you know, knowledge of these report results could be held against us in an inspection if we do not act accordingly.

If you have any questions concerning the report, just let me know. Thank you in advance for your cooperation.

cc: Gary Follmer
Vic LaFay

Hill and Griffith Company
4606 W. 16th Street
Cicero, Illinois 60804

I. EXECUTIVE SUMMARY

This letter will serve as a review of the results of the recent industrial hygiene survey at your facility. The survey focused on dust and silica exposures in the Maintenance, Mixing, Smoot, Coal Grinding and Bagging areas and on noise exposures in the Shipping, Maintenance, Mixing, Smoot and Coal Grinding areas. Thank you for your assistance during my survey and for your interest in the health and safety of your employees.

High levels of respirable dust and silica noted in the sampling during Maintenance require further engineering or other controls to reduce employee exposures.

All other contaminant levels noted in the air sampling are below the recommended guidelines.

Noise exposure monitoring indicates the need to continue your hearing conservation program for employees working in the Shipping/Loading and Smoot/Unloading Railcars areas.

Hearing conservation and respiratory protection programs are in place and well organized.

Data generated during the survey are shown in the Tables included in the Addenda. Employees should be informed of the results of the air sampling and audio dosimetry.

II. DISCUSSION OF FINDINGS

Air Sampling Results

Air sampling was conducted in the following areas:

Area	Contaminant Evaluated
Maintenance	Respirable dust, silica,
Mixing	Respirable dust, silica
Bag Packing	Respirable dust, silica, total dust
Unloading Railcars	Respirable dust, silica
Coal Grinding	Coal dust, total dust

Personal breathing zone and area samples were taken. Contaminant concentrations were generally below established exposure guidelines, the ACGIH Threshold Limit Value (TLV) and the OSHA Permissible Exposure Limit (PEL). Silica-cristobalite concentrations were below the laboratory's limit of detection. The results and the corresponding TLV/PEL are shown in a Table in the Addenda.

The area of exception is noted below:

Maintenance

The respirable dust concentration noted for the Maintenance employee was 2.7 mg/m^3, which is approaching the ACGIH TLV of 3.0 mg/m^3 and below the OSHA PEL of 5.0 mg/m^3, the silica concentration noted was 0.11 mg/m^3, which is equal to the TLV of 0.1 mg/m^3. Given the variety of tasks maintenance employees work on during the day, the recommended practice to control the exposures would be the use of respirators which protect against particulates.

The employee working in Coal Grinding was exposed to a level of coal dust which, depending on the percent silica in the coal, may be approaching the recommended guidelines. Current data suggests the silica level is less than five percent, which is the cut-off point for the lower PEL. Further studies of the percent silica in the coal are needed. Use of a respirator which protects against particulates is needed until further data is gathered on the percentage of silica in the coal.

Sound Level Measurements

One employee in each of the following areas: Shipping/Loading, Maintenance, Mixing, Smoot/Unloading Railcars and Coal Grinding, were chosen for personal audio dosimetry to determine their average noise exposure. The levels noted ranged from 81-88.4 dBA. The highest levels were noted for the Shipping/Loader and Smoot/Unloader employees. Two of the employees monitored were exposed to an average noise level exceeding the OSHA AL of 85 dBA. Audio dosimetry results are shown in a Table in the Addenda.

The eight hour allowable noise exposure established by OSHA is 90 dBA. Employee exposures above 90 dBA require reduction by the implementation of engineering controls or by the use of hearing protection. Exposures over the OSHA action level of 85 dBA require the development and implementation of a hearing conservation program. A hearing conservation program consists of a written program, annual training, annual audiograms, notification of test results, and the availability of a variety of hearing protection. Written procedures help ensure that all elements of the program are consistently followed over time. A hearing conservation program is in place at the plant.

III. RECOMMENDATIONS

97-5-1 Use of respirators during Maintenance activities and during Coal Grinding operations is needed to reduce employees exposure to silica, respirable dust and coal dust.

97-5-2 Continue to include employees in the Shipping/Loading and Smoot/Unloading Railcars areas in your hearing conservation program.

IV. ADDENDUM

- Data Tables
- Purpose/Standards/Method

Air Sampling Data

Sample Number Date	Department/ Operation	Employee Monitored	Sample Period	Air Contaminant	Contaminant Concentration (Mg/M^3)	ACGIH TLV (Mg/M^3)	OSHA PEL (Mg/M^3)
HG 29 5/13/97	Maintenance	Ken Montelo	7:21-2:37	Respirable dust Silica-quartz Silica-cristobalite	2.7 0.11 <0.04	3 0.1 0.05	5 1.2** NE
HG 52 5/13/97	Mixing	Leon Davis	7:30-3:45	Respirable dust Silica-quartz Silica-cristobalite	0.85 0.03 <0.03	3 0.1 0.05	5 1.2** NE
HG 62 5/13/97	Bag Packer	Ike Henderson	7:35-2:32	Total dust	5.8*	10	15
HG 43 5/13/97	Bag Packer	James Gray	7:37-2:35	Respirable dust Silica-quartz Silica-cristobalite	2.1 0.06 <0.04	3 0.1 0.05	5 1.2** NE
HG 46 5/13/97	Smoot/Unloading Railcars	Nick V.	7:49-2:30	Respirable dust Silica-quartz Silica-cristobalite	0.04 <0.04 <0.04	3 0.1 0.05	5 1.2** NE
HG 83 5/13/97	Coal Grinding	Larry Jackson	8:52-3:00	Respirable dust-coal	0.19	2	2***
HG 32 5/13/97	Coal Grinding	Area Sample-Pole Between Two Mill Stations	8:22-3:00	Total dust	1.4	10	15

* = Laboratory noted loose particulate. Sample results may be an underestimation.
< = Less than. Below the laboratory's detection limit.
NE = Not Established.
** = The formula for determining the PEL is (10 mg/m^3) / (% silica + 2).
*** = The PEL is reduced to 0.1 when the silica concentration in the coal is >5%.

Audio Dosimetry Data

Dosimeter Number Date	Department	Employee Monitored	Sample Period	% Exposure During Sample Period	Lmax (dBA) During Sample Period	Lavg (dBA) During Sample Period
10 5/13/97	Shipping/Loading	Jim Stay	7:05-2:39	72.7	132.8	88.1
25574 5/13/97	Maintenance/Supervisor	Gary Bukowski	7:15-1:30	26	113.8	82.1
10447 5/13/97	Mixing	Leon Davis	7:26-3:45	29.7	130.8	81
27292 5/13/97	Smoot/Unloading Railcars	Nick V.	7:49-2:30	66.5	128.2	88.4
21167 5/13/97	Coal Grinding	Larry Jackson	8:51-3:00	30.6	110.2	83.4

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PURPOSE

The purpose of the survey was to evaluate the work environment for potential health hazards associated with various employee exposures. Manufacturing processes, procedures and materials were reviewed and evaluated in terms of employee exposure to chemical and/or physical factors. Where appropriate, environmental monitoring was conducted so as to represent employee exposures. Whenever possible, methods of sampling and analysis were designed to conform with the methods recommended by the National Institute for Occupational Safety and Health (NIOSH). All chemical samples were analyzed by NATLSCO laboratory accredited through the American Industrial Hygiene Association.

STANDARDS

The standards of the Occupational Safety and Health Administration (OSHA) and/or guidelines of the American Conference of Governmental Industrial Hygienists (ACGIH) were used as a basis for evaluating the results of environmental sampling data. Some caution must be exercised in the interpretation of these standards, however. Threshold Limit Values (TLV) refer to concentrations of airborne substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day, without adverse effects. Due to individual variation and susceptibility, some workers may experience discomfort or aggravation of preexisting conditions at exposure concentrations at or below the threshold limit. The TLV should be used as a guide in the control of health hazards and should not be used to strictly differentiate between safe and dangerous concentrations.

The sampling data presented in this report represent full and partial period samples. It should be noted that daily variation in employee work practices, production levels, machine operations, and seasonal factors may individually or in combination alter employee exposure parameters as well as sampling data. It is believed that the data developed during this survey are fairly representative of typical conditions.

METHODS

AIR SAMPLING

Air Samples were collected using Gilian Models Gilair SRMF Constant Flow Samplers. Personal breathing zone and area samples were collected. Periodic pump flow rate checks were completed during the sample period using a rotameter calibrated via bubble meter. A discussion of the specific sampling methods used during the survey will follow.

Dust Containing Silica

The samples for dust containing silica were collected using preweighed PVC filters at a flow rate of 1.7 liters/minute. A 10 mm nylon cyclone was used to collect only respirable dust. The

samples were reweighed and then digested in a plasma low temperature asher. The residue was then transferred to a silver membrane filter and the free silica was determined by x-ray diffraction.

Total Dust

The samples for total dust were collected at a flow rate of 2.0 liters/minute using preweighed PVC filters. The filters were re-weighed upon return to the lab to determine the total weight concentration.

SOUND LEVEL MEASUREMENTS

Personnel noise monitoring using DuPont Mark I and Mark II Audio Dosimeters were also completed in several areas. The noise dosimeters integrate noise levels between 80 and 138 dB, with an 80 dB threshold level, 90 dB criterion level and 5 dB exchange rate. Calibration checks on all units were acceptable before and after the survey.