FROM

M. J. VAUDREUIL

PITTSBURGH OFFICE

TO

MR. G. D. HICKS

MASSENA OPERATIONS

H & S
Industrial Hygiene

BDD MLF
EFR JD
TBB CCD
RMJ DB
HGS LMN
PHS EDS
MJV

AUG 14 1979

1979 August 13

RE: INDUSTRIAL HYGIENE SURVEY OF MASSENA OPERATIONS

I. Summary and Discussion

The following is a summation of the walkthrough survey conducted in conjunction with the OSHA industrial hygiene inspection of 1979 July 10-13 and 24-26. Recommendations are included for your information and for the consideration of production management.

Observations made during the two week-long visit indicate that we have potentially serious health hazards at Massena. These conditions clearly deserve attention and remedial action. The problems which I will review should be given top priority. Management support of corrective efforts is essential.

Many of the conditions observed can be expected to result in OSHA citations. While the OSHA inspector's judgement and techniques may be open to criticism; nevertheless, the fact remains that we do have health hazards that should be controlled. A number of these problems have been recognized before, but corrective action is not apparent. Again, attention by Massena management is fundamental to resolving these situations.

The problems noted can be grouped into several major categories, each with plant-wide implications. Specific recommendations are listed in Section II. The major areas for concern are:

A. Maintenance

There does not appear to be an aggressive, on-going maintenance program at Massena; particularly with respect to exhaust ventilation and housekeeping.

Lack of maintenance and effectiveness of exhaust systems was evident throughout the smelting plant. Areas worthy of particular note were: pitch unloading, butt stripping and bath crushing.

Housekeeping of the workplace and lunchrooms was poor, resulting in excessive dust levels on floors, eating surfaces, and in the plant atmosphere. Many sections of the potrooms and associated areas have as much as six inches of accumulated dust on the floors. Vehicles passing through these areas were observed creating clouds of airborne dust. Similarly, several floor sweeping machines put a greater amount of dust into the air than in their collection boxes.

412279 0035

ALCOA

SP-4563

PLAINTIFF'S EXHIBIT
tabbies
AL-1571

B. Work Practices

Many practices were observed which unnecessarily increase employee exposure to dust, noise, asbestos and coal tar pitch volatiles.

The use of inappropriate tools, equipment and procedures is commonplace; and in several cases, standard operating procedure. For example, transporting ore and bath in payloaders causes much dust to become airborne. Routing siphon tubes without local exhaust ventilation has much the same effect.

C. Training

In general, employees have not been adequately informed about the health hazards of their respective jobs, nor about the precautions needed to be taken. This is at least partially responsible for improper work practices, as well as both inadequate and incorrect usage of personal protective equipment. For example, workers have not received formal instruction in the use and care of respirators.

Massena's industrial hygiene staff is both concerned and competent. However, the effectiveness of the industrial hygiene program is dependent upon the support and commitment of Massena management at all levels. Conditions at Massena suggest that we must reaffirm this commitment if we expect to make progress in controlling health hazards. The Pittsburgh Industrial Hygiene staff is ready to supply any needed assistance.

II. Recommendations

Recommendations are divided into two categories. The first concerns complex problems with plant-wide application. They generally call for organized efforts or programs, rather than for correction of specific conditions. The second category is devoted to the latter.

Category I: Plant-Wide

DUST - CT PV - SO_2 CO A.

1. A written, comprehensive respiratory protection program should be established and administered. As a minimum, the program should include sections 1910.134(b)(1) through 1910.134(b)(14) of the OSHA standards as detailed in Alcoa's respiratory protection standard.

Prot Cit

2. A written program for the routine evaluation of all exhaust ventilation systems should be devised and implemented. The assistance of the Engineering Department may be necessary. The program should include measurements of face velocity and static pressure, as well as comprehensive visual inspections.

MAINT & ENG A

React vs Preventive ie. Maint.

3. Vacuum cleaning methods should replace sweeping where feasible. Sweeping is inefficient and causes unnecessary dispersion of dust (in some cases, toxic dusts) into the plant atmosphere.

Lunchrooms and other designated eating areas should be cleaned frequently to prevent accumulation of dust on eating surfaces. The hazards of ingesting toxic materials would be substantially reduced.

Eating areas should be air conditioned and maintained at a slight positive pressure so that doors and windows can be kept closed. This would greatly restrict the influx of dust.

5. Heating of food containers in work areas should not be permitted. Contamination by fluorides and other toxic materials is possible. Microwave ovens could be provided in designated eating areas.

6. Consideration should be given to providing crane cabs with "Catco" (or similar) ventilation systems for reduction of operator exposure to excessive levels of airborne contaminants and for thermal comfort.

7. Excessive noise levels from high velocity air exhaust ports are common to all areas of the works. All such noise sources should be fitted with suitable mufflers. Some examples are:

   a. conveyor transfer cylinders
   b. crane bucket cylinders
   c. pot siphon tubes
   d. jackhammer exhaust

8. All non-essential uses of asbestos should be eliminated and appropriate substitute materials utilized. For those applications where asbestos cannot be replaced, its use must be rigidly controlled. A written program would be beneficial; encompassing all of the requirements listed in the OSHA asbestos standard, 1910.1001. Please refer to H. G. Sakoian's letter of July 30, regarding asbestos substitution.

Category II: Specific Conditions

1. The exhaust ventilation system provided in the pitch unloading building (#352) is grossly inadequate. Little or no vapor is collected. The existing curtains should be extended downward to reach the top of the car; effectively enclosing the source of emissions. Operation of the blowers must be checked. Personal and area sampling should then be performed to evaluate the effectiveness of the system. Additional details may be obtained from R. L. Guilloud's environmental audit of the carbon plant, dated 1978 June 26.

anode press

DUST & CTPV

Maint & Design ? Other plants ? little attention

2. The missing length of flexible duct for the conveyor hood atop the P225 ~~green mill~~ should be replaced. CTPV's are now emitted directly to the workroom air.

Poss Cit may be NO depending on level

DUST

3. All access doors, covers and panels on the primary impactor exhaust system (Bldg. 354B) must be kept closed to ensure efficient operation and minimize employee exposure to dust.

B

maint & Design

DUST

4. Every effort should be made to repair holes in the primary and secondary impactor exhaust ductwork as soon as they appear. Such deficiencies greatly reduce the effectiveness of the system.

They will act

NOISE

5. In Bldg. 354B, suitable mufflers should be installed on the butt conveyor transfer cyclinders to reduce employee exposure to noise levels of 99 to 100 dBA generated by high velocity exhaust air. B

Kicker to sample Action ok

RESPIR.

6. For maintenance work in the scrubber pump houses (Bldgs. 368A and 368B), where several ppm of SO_2 may be present, workers should wear full facepiece respirators with acid gas cartridges. Scott Air Paks are too restricting for that type of work. B

MJV to advise. They agree

7. Lightweight, acid-resistant clothing should be furnished to employees required to perform maintenance work around the scrubber systems in warm weather. B

Being debated Hicker vs Wegner

NOISE

8. Consideration should be given to constructing an acoustical enclosure about the anode blow-off station (Bldg. 351). This would reduce employee exposure to the present, intermittent noise levels of up to 100 dBA. B

They agree & will be heard

DUST EFF

9. The smelting plant locker room should be vacuumed rather than swept. Sweeping serves to disperse fluoride-laden dust into the air and onto employees' clothing.

They agree Carried to implement

NOISE

10. Siphon tubes should not be cooled with compressed air prior to cleaning. This practice exposes employees to noise levels of approximately 95 to 100 dBA, for periods up to one-half hour in duration. B-C

No comment

DUST

11. Routing of siphon tubes generates large quantities of airborne dust. The operation should be provided with local exhaust ventilation and/or isolated. C

Same as 10 Will implement

NOISE

12. Hearing protection must be worn when routing out siphon tubes. The practice generated sound levels in excess of 95 dBA. In addition, consideration should be given to either changing and/or isolating the operation.

NOISE

13. All employees using jackhammers must wear hearing protection. Jackhammering (including crustbreaking) produces noise levels ranging from 105 to 115 dBA. C

NOISE

14. Lack of lubrication on the anode conveyor (north side of 318) resulted in noise levels of 91 to 93 dBA. Proper lubrication would reduce the noise to less than 85 dBA. C

DUST

15. Front-end loaders should not be used to off-load bath from the bath crusher storage tanks. The exhaust ventilation provided is effective only for the boxes designed for this purpose. A Cit

NOISE

16. Consideration should be given to an enclosure of acoustical treatment for the bath crushing mill. The operator of the mill is presently overexposed to noise levels of 94 to 102 dBA. could have been citable A

DUST

17. The capacity of the bath crusher storage bays should be doubled. This would accommodate the excess bath which presently is one source of a serious dust problem. B - C

DUST & MAINT

18. The exhaust ventilation system for the ore filling station in Bldg. 374 must be repaired. The blower is inoperative; consequently, large quantities of dust are generated during filling operations. B-C

DUST

19. The practice of dumping ore and bath with a payloader into the hopper located in 378B should be discontinued. ~~The area~~ is ~~not provided with local exhaust ventilation~~. Dust from the operation completely fills the area and drifts through the P-75 potrooms, creating an unnecessary exposure.

NOISE

20. The present enclosure for the vibrator in the foundry is inadequate. Noise levels outside the curtain are in the range of 95 to 102 dBA. A more substantial structure is needed. could have been CIT A

adjacent ↕ NOISE

21. Consideration should be given to separation of the various foundry grinding stations with acoustical curtains to reduce carry-over of noise. A - Cit

SILICA DUST

22. The core knock-out station should be provided with local exhaust ventilation to minimize employee exposure to silica-bearing dust. (Noise also) B Signals upon complying (A)

Mold filler → CIT.

M. J. Vaudreuil

M. J. VAUDREUIL

MJV:mlf

cc: E. E. Rumberger, Pittsburgh Office - 7
T. B. Bonney, Pittsburgh Office - 7
B. D. Dinman, Pittsburgh Office - 7
G. H. Schneider, Massena Operations
J. Reid Clark, Massena Operations
V. W. Rieke, Pittsburgh Office - 2
R. L. Guilloud, Pittsburgh Office - 2
W. T. Burt, Massena Operations
R. K. Morrow, Massena Operations

Ravenna — Copies for: DWM, CLB, GHS, JMK, KKM, [illegible], DEJ, GD Hicks —

FROM M. J. VAUDREUIL

PITTSBURGH OFFICE

TO MR. G. D. HICKS

MASSENA OPERATIONS

Confidential - Rte in sealed envelope.

Discussed with Drinnan, [illegible] Vaudreuil 79-08-16. Ignore objectionable tone of letter. Vaudreuil now understands better where his standing in the scheme of things is. There are some items needing attention. See comments in margin - GDH

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Housekeeping of the workplace and lunchrooms was poor, resulting in excessive dust levels on floors, eating surfaces, and in the plant atmosphere. Many sections of the potrooms and associated areas have as much as six inches of accumulated dust on the floors. Vehicles passing through these areas were observed creating clouds of airborne dust. Similarly, several floor sweeping machines put a greater amount of dust into the air than in their collection boxes.

[Margin note:] JMK/DEJ - Have your folks review. Make sure PM & repair getting done. Where we have undercapacity equipment should have plan & schedule for revision. Ignore bath crushing. Drinnan admits no location has solution. Pl. Engr. should be responsible.

They understand our long range program to upgrade lunchrooms. OK. Agreed we should keep sweepers - particularly bag collectors in better repair.

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ALCOA

B. Work Practices

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The use of inappropriate tools, equipment and procedures is commonplace; and in several cases, standard operating procedure. For example, transporting ore and bath in payloaders causes much dust to become airborne. Routing siphon tubes without local exhaust ventilation has much the same effect.

agreed but make them understand sometimes necessary for lack of other way to handle.

C. Training

In general, employees have not been adequately informed about the health hazards of their respective jobs, nor about the precautions needed to be taken. This is at least partially responsible for improper work practices, as well as both inadequate and incorrect usage of personal protective equipment. For example, workers have not received formal instruction in the use and care of respirators. This is the law and we must be sure it is getting done.

Massena's industrial hygiene staff is both concerned and competent. However, the effectiveness of the industrial hygiene program is dependent upon the support and commitment of Massena management at all levels. Conditions at Massena suggest that we must reaffirm this commitment if we expect to make progress in controlling health hazards. The Pittsburgh Industrial Hygiene staff is ready to supply any needed assistance.

only way to avoid P&A efforts is for us to do the job. None of us need more P&A interference -

II. Recommendations

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1. A written, comprehensive respiratory protection program should be established and administered. As a minimum, the program should include sections 1910.134(b)(1) through 1910.134(b)(14) of the OSHA standards as detailed in Alcoa's respiratory protection standard.

Must do!

2. A written program for the routine evaluation of all exhaust ventilation systems should be devised and implemented. The assistance of the Engineering Department may be necessary. The program should include measurements of face velocity and static pressure, as well as comprehensive visual inspections.

Do what necessary to assure good operation. Don't think we need another elaborate written program -

Have down wash rooms. Maintain sweepers. Forget vacuums.

3. Vacuum cleaning methods should replace sweeping where feasible. Sweeping is inefficient and causes unnecessary dispersion of dust (in some cases, toxic dusts) into the plant atmosphere.

4. Lunchrooms and other designated eating areas should be cleaned frequently to prevent accumulation of dust on eating surfaces. The hazards of ingesting toxic materials would be substantially reduced.

Agree

Eating areas should be air conditioned and maintained at a slight positive pressure so that doors and windows can be kept closed. This would greatly restrict the influx of dust. Smelter & Lagoit Plt only —

Up to Prod Mgrs. must cook on pots.

5. Heating of food containers in work areas should not be permitted. Contamination by fluorides and other toxic materials is possible. Microwave ovens could be provided in designated eating areas.

6. Consideration should be given to providing crane cabs with "Catco" (or similar) ventilation systems for reduction of operator exposure to excessive levels of airborne contaminants and for thermal comfort. Not now. Wait for ECL crane evaluation.

7. Excessive noise levels from high velocity air exhaust ports are common to all areas of the works. All such noise sources should be fitted with suitable mufflers. Some examples are:

   a. conveyor transfer cylinders
   b. crane bucket cylinders
   c. pot siphon tubes
   d. jackhammer exhaust

} where suitable off-the-shelf equipment available.

Agree. Push this hard! right

8. All non-essential uses of asbestos should be eliminated and appropriate substitute materials utilized. For those applications where asbestos cannot be replaced, its use must be rigidly controlled. A written program would be beneficial; encompassing all of the requirements listed in the OSHA asbestos standard, 1910.1001. Please refer to H. G. Sakoian's letter of July 30, regarding asbestos substitution. (Hicks should distribute copies to all Prod Mgrs, Engr. & Maint mgrs & supts, & ERW.

Category II: Specific Conditions

JMR/DET investigate —

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M. J. VAUDREUIL

MJV:mlf

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T. B. Bonney, Pittsburgh Office - 7
B. D. Dinman, Pittsburgh Office - 7
G. H. Schneider, Massena Operations
J. Reid Clark, Massena Operations
V. W. Rieke, Pittsburgh Office - 2
R. L. Guilloud, Pittsburgh Office - 2
W. T. Burt, Massena Operations
R. K. Morrow, Massena Operations