

TELEGRAM

DATE 1980 JUNE 06

TO: J. R. ARCHIBALD, PITTSBURGH OFFICE - 6 (MAILED)
R. J. HOSFELD, PITTSBURGH OFFICE - 23 (MAILED)
R. W. WRENN, PITTSBURGH OFFICE - 23 (MAILED)
P. T. WOERZ - BADIN WORKS (BAW)
J. R. LOPES - BADIN WORKS (BAW)
W. R. DUSO - MASSENA OPERATIONS (MSW)
G. H. SCHNEIDER - MASSENA OPERATIONS (MSW)
R. R. RIPLEY - PT. COMFORT OPERATIONS (PCW)
C. L. NEWTON - PT. COMFORT OPERATIONS (PCW)
F. R. HUBBARD - ROCKDALE WORKS (RDW)
G. H. LANTZ - ROCKDALE WORKS (RDW)
M. A. GAMBILL - TENNESSEE OPERATIONS (ALW)
B. M. STARNER - TENNESSEE OPERATIONS (ALW)
D. L. WERNER - VANCOUVER OPERATIONS (VAW)
W. D. LUDWIG - VANCOUVER OPERATIONS (VAW)
J. W. ROSE - WARRICK OPERATIONS (WAW)
D. M. FALLS - WARRICK OPERATIONS (WAW)
C. C. WATSON - WENATCHEE WORKS (WEW)
M. E. GOZA - WENATCHEE WORKS (WEW)
T. S. TJIN A LIEN - PARANAM OPERATIONS (PBW)
J. H. GREEN - PARANAM OPERATIONS (PBW)

CC: T. I. S. BOAK - PITTSBURGH OFFICE - 14 (MAILED)

RECENTLY ONE OF ALCOA'S COMPETITORS EXPERIENCED A FATALITY IN THEIR SODERBERG POTROOM. THE INCIDENT OCCURRED WHEN A MAINTENANCE MECHANIC WAS CHANGING A TRANSITE PIPE. HE EXPERIENCED A FATAL SHOCK. DETAILS ARE NOT AVAILABLE AT THIS TIME. PLEASE CHECK YOUR JOB PROCEDURE TO DETERMINE IF ANY POTENTIAL PROBLEMS EXIST DURING THE ABOVE OPERATION.

ROBERT SHARKEY
PITTSBURGH OFFICE - 6
RS:jd

This Copy for

- ☐ TELEGRAPH OFFICE
- ☐ CONFIRMATION
- ☐ FILE
- ☐

PLAINTIFF'S
EXHIBIT
AL-1146

FROM K.A. ISAKSON
MECHANICAL ENGINEERING DIVISION
PITTSBURGH OFFICE WPH 3

RS/ E
SMELTING PLANT SAFETY MANAGERS
SMELTING PLANT ENGINEER MANAGERS

79-05-29

RE: SAFETY REVIEW - HYDRAULICALLY OPERATED POTROOM EQUIPMENT

Tests have recently been run at ATC simulating a broken high pressure hydraulic line on an "ECL" type carbon changing crane. These tests show that all hydraulic fluids will burn when in direct contact with molten bath or other ignition sources above 1300°F. Note: See Mr. J. T. Bunting's letter of 1979-05-29.

To safeguard our people and equipment we have prepared the following list of recommendations for upgrading the safety factor of existing potroom hydraulic equipment.

Please review these recommendations with the responsible area engineer and forward the results of this review to our attention by 79-07-01. Please include an estimated timetable for completing any required equipment modification at your location.

Potroom Cranes

(1) Inspect all cranes to ensure that routing of brake lines protects them from physical damage or arc damage. Historically this has occurred between pot and crane cab. (i.e., when carrying potroom crucibles or other potroom equipment.)

(2) Use fire resistant hydraulic fluids in the crane brakes where possible. Check the crane brake manufacturer's literature for recommended fluid. Refer specific questions to Mr. J. G. Freeberg at the Pittsburgh office.

(3) Install approved fire extinguisher in crane cab.

(4) Enforce strict housekeeping in crane cabs.

Spike Pullers - Soderberg Plants

The hydraulic system of this equipment is located some distance from continuous high temperature ignition sources. Also, molten bath is not normally exposed during operation of the equipment. For these reasons the hazard to personnel is judged to be low. The following recommendations do, however, apply:

(1) Use fire resistant fluid in this machine.

(2) Place unit on daily operational check prior to beginning potroom work.

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Smelting Plant Engineer Managers
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(3) Use only proof tested commercially made hydraulic hose assemblies compatible with the hydraulic fluid being used.

(4) Train operators to react properly to the first signs of hydraulic leaks. Schedule local safety training as required.

Crustbreakers

The operator of this machine is in close proximity to molten bath and to potential spray from a broken hydraulic line. The hazard to the operator is judged to be significant. The following recommendations apply to this machine:

(1) Use fire resistant fluid in these machines.

(2) Use only proof tested commercially made hose assemblies compatible with the hydraulic fluid being used.

(3) Add flexible shielding over hydraulic hoses and fittings. Air hose or fabric tubing may be used. Air hose, where used, should be resistant to the hydraulic fluid in the system. Higher temperature covers with less abrasion resistance are available in Guardian "Weldgard" non-asbestos fabric by Southern Asbestos Co., Charlotte, North Carolina.

(4) Ensure that all removable sheet metal hose shields are in place before operating machine.

(5) Place machine on daily operational and maintenance check-off log. Deficiencies should be corrected before moving machine into potrooms.

Pot Digging Machines - ("in-place" pot digging)

These machines are typically placed on or in the pot being dug. Exposed molten bath and metal is not present during normal operation of the machine. Consideration must be given, however, to the hazard created by the LPG or diesel fuel supply on the machine. The following recommendations apply to these machines:

(1) Do not operate the machine during potroom operations which require the removal of side-covers from adjacent pots. This caution should be included in operator's instructions and in the job safety analysis.

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- (2) Use fire resistant hydraulic fluid in these machines.
- (3) Use only proof tested commercially made hydraulic hose assemblies compatible with the hydraulic fluid being used.
- (4) Add flexible shielding over hydraulic hoses and fittings to turn high pressure spray leaks into drips.
- (5) Ensure that hydraulic hoses and lines cannot chafe, kink or bind during operation. Check for adequate anchorage.
- (6) Equip machine with approved fire extinguisher mounted within operator's normal reach.
- (7) Review routing of fuel lines to protect them from physical damage during use or transport of machine.
- (8) Provide insulating shields to protect fuel and hydraulic tanks from arc damage which might occur between digging machine and adjacent pot. Information on a satisfactory fire resistant fiberglass shield material is attached.
- (9) Place the machine on a daily operational check-off. Deficiencies to be corrected before moving machine into potrooms.

In addition to the equipment noted above, we are requesting each plant to perform a similar safety review of other pieces of locally used hydraulic equipment.


K. A. Isakson

KAI/rfb

cc: R.C. McCormack/F.J. McGrath AB20
A.G. Rust/R.L. Graves - WPH3
J.T. Bunting AB20
J.R. Roddy AB6
J.G. Freeberg WPH2
J.R. Archibald 736A
R.R. Corley 770B

Attachments

FROM K. A. ISAKSON
MECHANICAL ENGINEERING DIVISION
PITTSBURGH OFFICE - WPH 3

10 MR. D. J. ELROD
NORTHWEST ALLOYS, INC.
ADDY WORKS

1978-09-19

RE: SPECIFICATIONS FOR FIBERGLASS BUS INSULATION

Attached you will find the written performance specification for fiberglass column insulators as used at Sebree. Items 3-C, 4 and 5 indicate the performance presently required. Two things should be noted: First, the method of obtaining fire-resistant resin is not stated. This is accomplished by starting with a Class II resin (ASTM E84 rating of 25-75) and adding to it 3% antimony trioxide. This will lower flame spread to Class I (0-25). Yellow pigment is also added. A typical Class II starting resin is: Dion 6604, although there are probably many on the market. When ready for use, the resin is mixed with a catalyst to initiate curing.

If the insulators consist of two or more pieces and must be joined at installation, the above resin system can be used, "layered" with strips of glass cloth. Alternately, a "glue" can be prepared by mixing chopped glass mineral fiber with the resin.

Second, potroom column themselves do not generate resistance heat and, therefore, the covers do not aggravate a potential heat problem. If, on the other hand, you propose to shield current-carrying buswork, be sure full consideration is given to the altered heat dissipation characteristics due to the covers. You may want to forward copies of your proposal drawings to Mr. J. A. Smith in Pittsburgh for electrical review.

It may be to your advantage to have the parts supplied by an outside fabricator. Included here is information on two eastern fabricators:

Northern Plastics Corporation
7397 Taft Park Drive
East Syracuse, NY 13057
Phone: 1-315-463-1431

Advanced Fiberglass Industries
7141 Paxton Street
Harrisburg, PA 17111
Phone: 1-717-564-0820

Your purchasing people should be able to locate a capable fiberglass fabricator in the Seattle or Spokane area. Please call if you would like any additional information.

K. A. Isakson
K. A. ISAKSON

KAL:dah

Attachment

cc: R. L. Graves/R. B. Walker - WPH 3
R. C. McCormack/F. J. McGrath - AB 20
J. A. Smith - WPH 4
E. F. Hohlfelder - WPH 3
File #D-3-P10



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