March 12, 1956

TRIP REPORT TO ELMES ENGINEERING DIV., AMERICAN STEEL FOUNDRIES, CINCINNATI, OHIO
J. A. Quigley, M.D.

C. E. Schumann

Objective of Trip:

On Tuesday, February 28, 1956, the NLO Metallurgical Department began briquetting green salt-Mg blend on a 350 ton hydraulic press at the Elmes Engineering Division of American Steel Foundries, Cincinnati, Ohio. Approximately 2,000 pounds of green salt was briquetted during a period of seven days. For the purpose of evaluating exposures of personnel involved in this process, an industrial hygiene survey was conducted during the start-up. Several mechanical difficulties were encountered on the first and second days, which necessitated a total of three trips in order to obtain sufficient exposure data.

Persons Visited:

All trips were made in accompaniment with G. Waller of the NLO Metallurgical Department, who made arrangements for this survey.

Description of Trip:

Two chemical operators from the NLO Pilot Plant (Anthony Scotti and Elmer Rothring) performed the briquetting operations and handled all materials. Complete process clothing and washroom facilities were provided.

The press used for this work was covered with heavy wrapping paper, as well as the platform provided for operating the press. The green salt was transferred from a drum on the platform to the press die by means of a hand scoop. The briquette was removed from the press by hand and placed into another drum also on the platform. Any spills which occurred were vacuumed up immediately by means of a Lewyt portable vacuum. Filter-type respirators (MSA Comfo or Dustfoe) were worn by operating personnel.

Air dust samples collected during the various operations resulted as follows:

Operation	Concentration, d/m/M^3 High	Low	Ave.
BZ (3) Charging die with green salt using hand scoop	13,915	5,556	10,383
BZ (2) Pressing briquette	80	79	79
BZ (3) Removing briquette from press	1,020	68	418
GA (4) Press area during above operations	614	70	261

Maximum Allowable Concentration = 70 d/m/M^3

Most of the dusting occurred as the green salt blend was dropped into the die and a small amount of visible dusting was evident as the briquette was removed. The actual pressing, however, produced very little dust.

Upon completion of the briquetting operations (March 8, 1956) the paper was removed from the press and platform and all surfaces were vacuum cleaned. Where contamination could not be removed by vacuum cleaning an oiled rag was used. The die and all other contaminated materials (including the wrapping paper) were drummed and returned to NLO. The press and all surrounding surfaces were monitored with a 2610-A survey meter and a Pee-Wee alpha counter. No detectable contamination was left at the Elmes Shop.

Conclusions and Recommendations:

Should similar briquetting operations be done, either at Elmes or any other out-plant site, dust controls should be provided. A Spencer portable vacuum (or a similar type air cleaner) could be used in conjunction with a small canopy type hood which could be placed over the die. The hood should be movable since the mold has to be moved out of position to be charged.

Commitments:

None.

C. E. Schumann

CES:ljm

cc: R. C. Heatherton
O. R. Magoteaux
O. Muller
G. W. Wunder (2)
Central File