

To K. Morton

Date May 16, 1978

Copies To W.A. Moore; A. Hall

Ref.

From L.J. Connell

Subject Action Plan to reduce Airborne Arsenic Dust Levels.

Steps are being taken to completely enclose the hot cottrell dust quench system to reduce airborne arsenic dust levels observed in the cottrell working environment. It is believed that gaseous arsenic is escaping into the environment while the hot dust stream is being water quenched. By enclosing the quench tank and venting the exhaust back to the flue, the quench tank will be under a negative pressure reducing gaseous emissions to a minimum. Equipment manufacturers have been contacted in a search for an enclosed quench installation, however, in the interim a vented quench box will be constructed housing a sloped screen to remove oversize dust lumps. The interim installation should be complete by June 3/78.

Measurements by Giant personnel indicate that the installation of a clean air supply to the cottrell lunchroom has lowered airborne arsenic concentrations by 80% in the lunchroom itself. A noise attenuator was constructed and installed in the cottrell lunchroom filter system in early February and has been in continuous use since. During the summer months air is being drawn from outside the cottrell building to feed the lunchroom filter system.

The high airborne arsenic dust levels in the roaster building reported by Mr. Ireland do not agree with levels recorded during the period March 4-11/78 by Giant personnel. The incongruity between measured levels suggests the possibility that these high levels may not be representative of the roaster building working environment. To avoid future occurrences of spurious high airborne arsenic levels a removable metal cover will be built to enclose the calcine quench tank. Leaks in the upper roaster off-gas handling system will be more difficult to locate, however, the problem will be investigated during the roaster shutdown of May 20-24th when the flues can be closely inspected.

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MEMORANDUM

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Measurements of total airborne arsenic dust levels in the roaster control room are consistently below the recommended T.L.V. for respirable airborne arsenic and hence we see no justification for the claim that the roaster control room is an unsafe area for workers to consume food or fluids. Personal hygiene and the proper cleaning of utensils is a practise that must be strictly adhered to no matter where the working environment be located. Equipment to provide a filtered source of positive air pressure inside the control room has recently arrived and should be installed by mid June. A positive pressure inside the control room should reduce concentrations of air borne dust contaminants entering the environment.

The practise of short term (4 hours) low volume air borne dust sampling will introduce larger sources of error in the monitoring of airborne dust levels. An example of the type of incongruities that will arise is demonstrated in the total airborne arsenic dust levels measured in the roaster building on March 16/78. The consistently higher AM readings are inconsistent with the continuous operation of the roaster. Roaster feed rate and operating parameters were constant throughout March 16th. The use of high air volume sampling techniques is recommended as the only method with sufficient accuracy to allow comparison of airborne arsenic dust levels as measured over a time period less than an 8 hour working period to the recommended 8 hr/day - 40 hr/wk time weighted exposure limit.

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