

J. DAMIANO

MEMORANDUM

H & S
Industrial Hygiene

PITTSBURGH OFFICE - 6

1984 April 27

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RE: ANALYSIS OF BULK SAMPLES FOR ASBESTOS

During our recent seminar, we discussed the need to analyze various insulating materials for asbestos. I consulted Dr. Richard Danchik on this subject. Dr. Danchik is Manager of the Environmental Health Laboratory located at the Alcoa Technical Center. Based upon our experience, we offer the following guidance:

There are two good methods for identifying asbestos in bulk samples:

- Phase contrast microscopy followed by x-ray diffraction
- Polarized light microscopy with dispersion staining

The Environmental Health Laboratory uses the former method. These methods, however, are not practical for a plant laboratory. If you need to evaluate for the presence of asbestos in new insulating materials (asbestos substitutes), I would suggest that samples be submitted to the Environmental Health Laboratory.

It has been my experience that questions arise regarding the presence of asbestos in old insulation found in furnaces, pipe lagging, duct work, ceilings, etc. Several years ago, Point Comfort Operations developed an operating procedure requiring maintenance supervision to submit representative samples of the material to the plant industrial hygiene department prior to beginning a job. The analyses are made by phase contrast microscopy, usually within the hour. If asbestos-like fibers are found in the samples, the maintenance crew assigned to remove the insulation is required to follow the work practice precautions appropriate for asbestos.

If you can go with a microscopic determination, that would be preferred; however, I understand the difficulties associated with obtaining a microscope and training your personnel. Beyond that, there are alternatives. One thought is to find a commercial or academic laboratory in Brasil; maybe Dr. Daphnis Souto can advise upon the availability of consulting laboratories.

The other alternative is a colorimetric method developed several years ago. I have enclosed a report on this subject. The method should be considered a screening test; the results are not definitive. A few false negatives have been reported since Dr. Danchik's letter of September 1980. Also, the one-month shelf life for the reagents is a disadvantage.

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If the microscopic analysis is not practical in your plant, you may want to consider the colorimetric method. In the case of new materials, however, where asbestos is suspected (or old materials, if necessary), I recommend sending bulk samples to the Environmental Health Laboratory.

Please contact me if there are any questions.


JOSE DAMIANO

JD:bep

Attachments

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