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North American Refractories Company
Technical Center
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Michael D. Heintzman, Esquire
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Dear Mr. Heintzman:

I am a graduate mineralogist, a person whose forte deals with the origin and structure of minerals. I graduated in 1953 with a S.B. in Geology from the Massachusetts Institute of Technology. In subsequent work done at the Pennsylvania State University I earned an M.S. in Mineralogy in 1955, and a Ph.D. in Mineralogy in 1961.

My industrial experience began with Carborundum Company in 1960, where I was hired as a Supervising Engineer responsible for all raw materials, products-in-process and finished products testing for their Bonded Abrasives Division. In late 1962 I was hired as a Research Mineralogist for Basic Inc.; I held that position for about one and a half years, and my major assignment was to evaluate their raw materials, products-in-process and finished products, the latter being evaluated as after manufacture and, also, after service. I became Quality Assurance Manager in 1964, and held that position for about one year. After a two-year position as a Professor at Allegheny College in Meadville, Pennsylvania, teaching various courses in geology and mineralogy to undergraduates, I was hired as a Research Mineralogist for North American Refractories Company in Curwensville, Pennsylvania. I held that position for three years. During this time I was also responsible for evaluating various raw materials, products-in-process and finished products manufactured by NARCO, as well as those finished products after service. In 1970 I became the Director of Research for North American Refractories Company, and, as such, am responsible for all product development and quality assurance activities conducted by North American Refractories Company.

North American Refractories Company manufactures refractories for the iron and steel industry as well as for the industrial

October 30, 1983

markets. We manufacture a broad line of refractories, but our primary product line is in the area of basic refractories.

The products manufactured by NARCO and our competitors go into a variety of furnaces in the steel industry. These furnaces range from coke ovens through blast furnaces and primary steel-making furnaces such as basic oxygen furnaces, ladles, and various reheat furnaces. In turn, each furnace is lined with a variety of refractory qualities from various refractory producers. In some cases, several brands of the same quality may be present. Such a condition complicates the pinpointing of a source of a mineral, for example, silica, and, in fact, may make any conclusion ambiguous.

The steel industry companies have staffs working for them that are skilled in the use of products that we sell. In fact, they, in many cases, specify the type of products used to line these furnaces. Our company has many meetings per year with these refractory specialists telling them about the technical aspects of our products as well as discussing the price. During these meetings many ideas are brought forth by the refractory specialists of the steel companies to affect our product development work. These refractory specialists have backgrounds that allow them to understand the types of raw materials going into these products, and, in many instances, also conduct their own development and testing work on these materials.

North American Refractories Company voluntarily began sending OSHA material safety data sheets to our customers in the early to mid-1970's. These sheets, which were supplied to certain steel companies as well, contained comments relating to the hazards of our various products, and augmented what the steel companies already knew about these materials based on their staff industrial hygienists. NARCO has always complied with all existing safety requirements, and has always supplied products that met the state of the art. Our company has been influenced by the actions of our customers, such as the steel companies, in attempting to protect our employees from the hazards of the various raw materials we use. As I said, these procedures are not unique. Our steel customers have as much knowledge, or more, of the dangers of exposure to various refractory dust than ourselves. Since they manage the installation of these materials in their furnaces, they are in the best position to protect their employees, certainly better than ourselves.

Steel companies, in many instances, have very specific protocols for approval of refractories for use in their furnaces. These specifications were developed following much testing by the steel companies of various refractory brands being offered by numerous refractory producers. Their specifications are most

... to our sale of refractories to them. In many instances, these refractory specifications have been developed in conjunction with major engineering companies, such as Koppers, who design furnaces themselves.

In the mid-1970's, NARCO appointed an industrial hygienist to assist us in protecting our employees from the hazards of raw materials and ensuing products. This action was taken as a response to the changes that we saw taking place not only in the refractories industry, but also in the steel industry at that point in time. There was great pressure being brought by government agencies at this point in time to also do this.

In summary, NARCO has always been interested in protecting its employees from the hazards of its raw materials and products, and has attempted to serve our customers by furnishing them with information that would allow them to do likewise. After all, they are in the best position to safeguard their workers' health as we are in the best position to protect ours. If there is anything further that I may do along these lines, please let me know.

Very truly yours,

NORTH AMERICAN REFRACTORIES COMPANY

R. A. Landy
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Director of Research

