



Bell Laboratories

subject: 18 and 19 Wirewound Resistors
Asbestos Health Hazard from
Phenolized Asbestos Insulator
-Case 36313

date: October 14, 1975

from: C. T. Goddard

Mr. G. M. Wilkening:

The 18 and 19 wirewound resistor uses an asbestos paper impregnated with phenolic varnish and phenolic molding compounds as a protective insulator for the resistance element. This type of insulator has been used on these resistors since the 1957 redesign. The annual production level on these resistors has been between 7 and 13 million over this time period. Due to system design changes, the demand for these resistors will be steadily declining, but is still expected to remain at several million for a number of years.

Approximately a year ago we were informed of the asbestos hazard and the OSHA requirements with the result that we might run into procurement problems with the asbestos sheet used in the insulator if asbestos plants are shut down. Consequently, we began investigating other asbestos-free insulators to replace the phenolized asbestos. To date we have been unsuccessful in locating a material so well adapted to the manufacture with the same cost as the phenolized asbestos. We are however continuing our investigation along these lines.

A letter to Mr. W. H. Yocom from Mr. W. P. Fuchs dated September 26, 1975, calls our attention to recent tests conducted by The Environmental Health and Safety people at the Columbus Works which indicate a possible safety hazard from the asbestos fibers in the phenolic insulator. Their tests disclose that no emergency situation exists at this time. However, they feel their tests did not adequately assess the true potential hazard which exists and recommend an electron microscope study be made of the insulator. We understand that they do not have the necessary equipment for this study and have requested assistance from your department. We feel this study should be made before making any material and manufacturing changes that would affect the resistor cost.

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