

Interoffice Communication

To R. E. Lehmkuhl

From T. G. Grumbles

Date September 4, 1981

Subject SUMMARY OF THE NCI STUDY OF THE BALTIMORE PLANT

The one unusual finding of this study was four deaths from hematopoietic cancers (in this case leukemias and multiple myeloma) when 1.07 deaths would have been expected based on national mortality rates. The authors used the standardized mortality ratio (SMR), the observed number of deaths divided by the expected number of deaths, as the statistical procedure to judge whether or not there was an excess number of deaths from any cause. This is a common technique used in occupational studies, and the authors used it in an appropriate manner.

However, the significance the authors placed on their findings is questionable. Their analysis should be considered hypothesis-generating rather than hypothesis-proving. At best the SMR method can control for age, race, and sex. In this study, race was unknown for 40% of the study population, further weakening the results obtained. When 95% confidence limits are placed around the incidence of hematopoietic disease in the plant population the 1.07 expected number falls just outside of the lower limit.

There are other questions relating to the significance of the findings in this study. However, the important question is the significance of the results in relation to plant conditions today. In the words of the author, the study findings are consistent with previous reports linking benzene exposure to leukemia. In other words, this is not new information and would not prompt us to do anything different in the plant than what we are now doing. Plant conditions and employee exposures have greatly changed since the 1947-1960 study period.

A tremendous amount of engineering work has been accomplished to reduce worker exposure, and more projects are currently underway and being planned. Administrative controls and education programs have supplemented the engineering projects to reduce exposures. We are confident that our employees are adequately protected from the hazards of benzene.

The Medical Division was consulted to determine if the study results would indicate any changes in our current medical surveillance program. We are now doing everything feasible to screen for benzene related health effects and no changes are necessary or feasible.

In summary, the NCI report supports past reports linking the possibility of leukemia as a result of occupational exposure to benzene and serves to support what we have done in the past and are continuing to do today to reduce worker exposures to benzene at the Baltimore plant and elsewhere in Conoco Chemicals.

T G Grumbles
Thomas G. Grumbles