

*sults of NCSI research and any actions which have been taken to alleviate pollution based on this research to date?*

Answer: Although this question has been answered by the testimony and the annotated material submitted with the corrected testimony, the most important phase of the National Council work is in the distribution of the information and the assistance of technical service. Most of the findings from the Council research work are implemented by the member mills to make them suitable for their particular conditions or situations. Furthermore, equipment evaluation and treatment studies by member mills or groups of mills working cooperatively with the National Council are distributed to all member mills. This proves especially beneficial to small mills which are not able to afford major research programs.

*Question 3b: Do you have any estimates of what else needs to be done or what other research must be carried on to completely eliminate the problems of pollution caused by papermill effluent?*

Answer: Although this question was answered in the original testimony, it is acknowledged that much more needs to be done in new and novel processes for effluent handling and treatment. In addition to the projects mentioned in the testimony, i.e., decolorization and sludge disposal, much more needs to be done in new and novel processes for effluent handling and treatment. Greatly increased expenditures for research will be necessary in order to accomplish these objectives—variously estimated at 4 to 10 times the present rate.

*Question 4a: In general, has the paper industry conducted research in response to regulatory action when its own sources of water are being imperiled or as part of a long-range program to return water to the streams in the condition it was before use?*

Answer: In general, the industry has conducted research in response to the will of the people as expressed by the applicable law and regulations.

Research in these areas by the paper industry was started before regulatory action became the factor it is today. Both the Sulfito League and the National Council were begun more than 20 years ago.

There is no doubt that the research conducted by industry has been in response to long-range programs aimed at overall reduction of existing pollution problems. However, the approach to any program is composed of individual steps. These steps have varying importance and are assigned priorities in accordance with need, available money, and technical manpower. Since both trained personnel and capital can be limiting, pure research is ruled out in favor of practical research with immediate solutions to immediate problems.

In response to the question, then, work on an imperiled water supply would certainly proceed before research on effluent treatment could, especially in light of the limiting factors mentioned above.

*Question 4b: What other reasons have motivated research carried on by the paper industry?*

Answer: Going beyond the above and looking to the future, the industry, through the National Council, is still conducting research in attempting to develop more advanced waste treatment processes which will produce treated waste waters suitable for reuse without dilution.