international news

Car catalysts pose health problems

from Colin Norman, Washington

In a move that will do little to enhance public confidence in environmental regulations and even less to restore public faith in technology, the Environmental Protection Agency (EPA) last week reluctantly decided to give automobile manufacturers at least another year in which to make further reductions in car exhaust emissions. The agency really had little choice in the matter.

The basis of the decision—which EPA Administrator Russell Train said last week is "the most unhappy decision that the agency has had to take since I have been here"—is relatively simple. The catalytic converters which all American car makers have adopted to clean up exhaust pollutants may themselves pose a hazard to health, so the EPA has decided to see how serious the hazard may be before forcing even more widespread use of catalysts. In short, although the catalysts seem to do a good job in oxidising hydrocarbons and carbon monoxide to less harmful compounds, they are also quite effective at oxidising sulphur dioxide to sulphuric acid, with the result that cars fitted with catalysts may be giving out harmful amounts of acid.

The decision to put off enforcement of stricter regulations was politically painful because it now provides car manufacturers and other industries with excellent propaganda material to use against any legislation which forces rapid introduction of clean-up technology. When Congress belatedly forced the car companies to clean up exhaust emissions by putting a pistol to their heads in the shape of the Clean Air Act, the only technology available was the exhaust catalyst. The car companies screamed that catalysts would be expensive, would increase gasoline consumption, and would simply be bad technology. They begged for more time to develop other technologies, but Congress and the EPA decided that, on the basis of past performance, the car companies wouldn't use the time to develop other means of controlling exhaust emissions, and so forced them to use catalysts.

As far as hydrocarbons, carbon monoxide and oxides of nitrogen are concerned, the catalysts have proved to be extremely effective. What's more, in spite of Detroit's warning to the contrary, their introduction on many 1975-model cars has even led to increased performance and efficiency. Then came the sulphuric acid problem.

It first came to light in the mid-1960s, but was disregarded as being insignificant. Then, in mid-1973 the problem was brought up again and given widespread publicity, and the EPA started a crash programme to determine just how serious a hazard to health it might be. The EPA found that cars equipped with catalysts produce, on average, 35 times more sulphuric acid per mile than cars without catalysts. Moreover, if an air pump is used to inject more air into the catalyst—a device which would be required to meet stricter pollution control standards—then production of sulphuric acid would be about 70 times that of a car without a catalyst.

Although the amount of acid produced by automobiles would be only a tiny fraction of that produced by factories, the problem is that it would be concentrated along freeways and in cities.

It wouldn't be so bad if there were a potential solution just around the corner, but there isn't. None of the three possible solutions—removing sulphur from gasoline, putting a sulphur trap in the exhaust and improving catalyst technology—provides a basis for regulation, Train said last week. It therefore seems at this stage that the only real chance of removing harmful pollutants from car exhausts without causing another health problem is for the car companies to go for a completely different engine design, such as the stratified charge engine. But since Detroit produces 10 million cars a year, it would be many years before the entire production line could be converted to a new technology.

At least total amounts of automobile pollutants spewed into the atmosphere will continue to decline, even with the regulations frozen at this year's level, because older, dirtier cars will be replaced with cars equipped with 1975-level control devices. But, since the fight over automobile pollution has been widely publicised, and because Congress and the EPA staked their hopes on the catalytic converter, the utter shambles that now reigns will be greeted with glee not only in Detroit but in a good many other corporate board rooms as well. □

The US Fish and Wildlife Service believes it has found a cheap and effective method for removing the potent teratogen dioxin from the herbicide 2,4,5-T. If so, it would remove some, though not all, of the opposition to use of the herbicide in the United States, and it would also provide a solution to the problem of what to do with the 2.3 million gallons of dioxin-contaminated 2,4,5-T left over from the Vietnam war.

The process is extremely simple. According to an announcement from the US Department of Interior, all that is required is to filter the solution through coconut charcoal and to rinse the charcoal with acetone. Tests carried out at the Fish and Wildlife Service laboratory at Columbia, Missouri, have shown that more than 99% of the dioxin in 2,4,5-T is removed by the method, and the government has applied for a patent for the process.

Although removal of dioxin from 2,4,5-T would make the herbicide much safer, there is considerable doubt about whether or not 2,4,5-T itself is teratogenic. The herbicide is therefore still unlikely to get a completely clean bill of health from its critics.

● After that embarrassing incident last year when President Ford had to withdraw the nomination of Andrew Gibson as head of the Federal Energy Agency when it became known that Gibson was drawing a large salary from the oil industry, Presidential appointees have been subjected to a thorough investigation before their names are sent to the Senate for confirmation. Last week, however, Ford announced that four people have passed the test and are being nominated for top science posts. They are Robert W. Fri, to be Deputy Director of the Energy Research and Development Administration (ERDA); James L. Liverman, to be Assistant Administrator of the ERDA for the environment; John Teem to be an Assistant Administrator of the ERDA for advanced energy systems; and Richard C. Atkinson to be Deputy Director of the National Science Foundation.