

66 billion dollar mistake". Not to be outdone, however, the Sierra Club responded with an advertisement urging Ruckelshaus to hold fast on the 1975 deadline.

As for the manufacturers' first point, Ruckelshaus stated last week that "the technological information available to me indicates that few catalysts will be required to meet this standard". But the manufacturers chorused that their information leads them to a different conclusion, and they hinted that they may take their case either to the courts or to Congress.

But as far as the standards relating to oxides of nitrogen are concerned, they may be on firmer ground and in any case they are likely to have the backing of the EPA. In short, the EPA has set a limit of 100 micrograms of nitric oxide per cubic metre of air as the maximum level to protect health and it originally estimated that the limit is exceeded in 45 regions throughout the United States. But it has since re-evaluated the concentrations using more precise techniques and will soon disclose that the level is exceeded in only two regions—Los Angeles and Chicago. Ruckelshaus in fact said last week that "our assessment of the health risk associated with (oxides of nitrogen) no longer supports the 90 per cent reduction standard and this should be reviewed quickly and, if our analysis is correct, the standard should be changed".

The automobile companies would be delighted if Congress accepts the need to change the standards because they have not yet found a reliable method for reducing emission of oxides of nitrogen. So far, US companies are concentrating on a dual catalyst approach but the NAS committee said in its report that no system has yet been found to be reliable and that the dual catalyst has a huge fuel penalty, increasing gasoline consumption by up to about 25 per cent. The stratified charge engine developed by Honda seems capable of meeting the standard for oxides of nitrogen as well as those for hydrocarbons and carbon monoxide, however.

The reason why the EPA is anxious to protect the Clean Air Act from being butchered is that it involves regulation of many sources of pollution in addition to automobiles and that changes in one area will affect others. The act requires the EPA to set ambient air quality standards nationwide and the states are empowered to meet the standards according to a specified timetable based on the emissions standards now established. But if the car makers are given more time to control exhaust emissions, many of the states' plans for meeting the air quality standards could be thrown badly out of kilter.

In the final analysis, however, the US car makers have only themselves to

blame if they end up using inferior technology to curb exhaust emissions. They began to work seriously towards pollution control only when the Clean Air Act put a pistol to their heads and, unless they can now bully Congress into giving them a second chance, they may have to pay for their mistakes on the market place when they compete with the Japanese companies.

ENERGY RESEARCH

Rumblings from Congress

by our Washington Correspondent

ALTHOUGH statements, reports and recommendations on the so-called energy crisis are by now two a penny, a report published last week by a special congressional task force merits careful reading. It suggests that spending by government and industry on research and development on new sources of energy has been unbalanced and insufficient, and calls for at least an additional \$1,000 million a year. The report is important because the task force which produced it has recently been promoted into a full subcommittee of the House Committee on Science and Astronautics, and as such will have a strong voice in shaping legislation dealing with energy research. It is also a useful yardstick by which to measure President Nixon's long overdue and eagerly awaited statement on energy policy, originally promised for February and now expected to be unveiled this week.

In short, the task force, which met under the chairmanship of Mike McCormack, an energetic young congressman from Washington, took a careful look at a report prepared for President Kennedy in 1964 by an inter-agency committee, and concluded that most of its recommendations "are still valid today—valid because so little action has been taken to implement them". The task force also recommends that an energy policy group should be established in the White House and that all the energy programmes of the Federal Government should be centralized in a single agency.

The task force does not say exactly how the extra \$1,000 million should be spent, or how it should be divided between the Federal Government and industry. But it does suggest that past spending has been biased towards nuclear energy, and singles out seven priority areas which hold great promise and deserve more money. They are basic research—for example, the National Science Foundation's RANN programme—materials science, solar energy, geothermal energy, breeder reactors, coal gasification and liquefaction and controlled thermonuclear fusion. Of these, only the breeder reactor has been given high priority by the Admini-

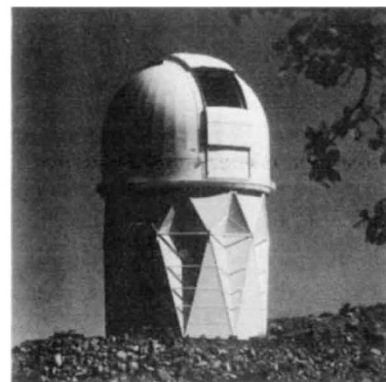
stration, and then the money has been put into the liquid metal fast breeder almost to the exclusion of other designs.

The suggestion that an extra \$1,000 million should be spent on energy research and development is based on the task force's belief that 10 per cent of the total national research and development effort should be devoted to energy. Given the technologically intensive nature of the energy industries, such an expenditure is not unreasonable, the task force states, since total outlays on research and development in the United States are running at a little under \$30,000 million. Such a commitment would require about \$3,000 million to be spent on energy research. But only some \$2,000 million is expected to be spent next year, and of that about \$750 million will come from the government.

Viewed in conjunction with the energy research and development programme proposed by Senator Henry Jackson and several of his colleagues (see *Nature*, 242, 224; 1973), the task force's proposals indicate which way the wind is blowing on Capital Hill. Jackson's bill calls for expenditures by the Federal Government of \$2,000 million a year over the next ten years on non-nuclear energy research.

Meanwhile, President Nixon's budget for next year calls for only \$772 million to be spent on energy research and development, and in view of the Administration's present cost-conscious mood, the forthcoming energy message is not expected to add much more money to the budget request. Funding for energy research is thus likely to be yet another bone of contention between the White House and Congress.

Erratum



THE photograph that inadvertently appeared on page 364 of this volume of *Nature* was, of course, of Britain's Goonhilly 3, a £2.25 million satellite communication station which was opened last July. The 158-inch Mayall Telescope that should have appeared is pictured above.