the stack gases of industrial and power plants. Thus industry is presented with a choice of pursuing stack gas technology on its own—an unlikely prospect, given current problems with the technology—or of banking on the success of "clean coal" technologies. The net effect may be a powerful inducement to accelerate coal mining in the vast and largely untouched deposits of the central plains and the Rocky Mountain states.

The rationale for accelerated coal production is not purely technological, however. In an energy message planned for later this winter, the President is expected to characterize increased coal production as a boon for national security and the U.S. balance of payments, to the extent that clean coal can reduce U.S. reliance on foreign petroleum and natural gas of low sulfur content.

Other, alternative sources of energy also receive new support in the 1974 budget. Money for solar energy and geothermal R & D would double to $16 million, and the Atomic Energy Commission is to receive $323 million for its work on the breeder, raising the government's contribution by 20 percent. Nonmilitary R & D on controlled fusion would increase $7 million to a 1974 total of $44 million. The Administration also lumps the millions it is spending on laser-triggered fusion weapons under the heading of "clean energy" programs, on the grounds that such work might produce spin-off of interest to the civilian effort.

The new budget also creates a $25 million "central fund" for energy in Interior to support the "exploitation of promising technologies." This new money would seem to vest Interior with new authority over energy R & D, an arrangement that is consistent with the President's announced intention of transforming Interior into a Department of Natural Resources with central authority over national energy policy, both nuclear and nonnuclear.

—ROBERT GILLETTE

Environment

Is there anyone here who understands this book? These numbers don't make any sense to me.—William Ruckelshaus, Administrator, Environmental Protection Agency (EPA), in discussing a portion of the budget with newsmen.

Mr. Ruckelshaus's tongue was planted firmly in cheek, but his complaint is nonetheless a common one. Federal budget documents are as much a masterwork of public relations as a proposal to Congress, and their lucidity sometimes rivals that of the Penn Central Railroad's annual report. But so far as one can divine from the voluminous documents released last week, the sector of the federal budget loosely described as "natural resources and environment" fared as well as any other category in a year when the watchword, more than ever, is inflationary control.

President Nixon has withheld about half the $11 billion authorized last year by Congress—over his veto—for water pollution control. At the same time though, the White House proposes to more than double the amount actually to be spent on pollution abatement (mostly for municipal sewage plants). This amount would rise from $727 million in fiscal 1973 to $1.6 billion in fiscal 1974.

In addition, the White House places a figure of $1.012 billion on its request for environmental R & D in fiscal 1974, an increase in obligations of $60 million. Much of this increase apparently would go into energy R & D.

A billion-dollar figure for environmental R & D may be a bit misleading, however, in two respects. For one, the definition of R & D is stretched to include such government services as maintenance of a weather satellite system and topographic mapping by the Geological Survey. Moreover, a close reading of the budget reveals several significant reductions in areas classically defined as R & D. Not the least of these involves a major "redirection" of the EPA's research program that tends to shift the agency away from development of pollution control technology and toward a narrower mission of supporting the agency's regulatory functions.

Thus, in fiscal 1974, the EPA's obligations for R & D would drop by $25 million to a level of $148 million. The single greatest cut, and potentially the most controversial, is an 88 percent or $15 million reduction in EPA's support of solid waste processing technology. In a news conference, Ruckelshaus maintained that this "new technology is in hand" and that it was now up to local communities to adapt it to their solid waste problems. This view, however, is not universally shared within the agency. "Obviously," one EPA official said privately, "this is a devastating reduction."

At the same time, the White House budget office proposes to cut 30 percent or $3 million from EPA's work on cleaner, alternative automobile engines and to terminate the agency's $5-million program to develop devices for scrubbing sulfur oxides from industrial stack gases. Ruckelshaus said that the EPA has fulfilled its responsibility of nurturing this technology to a point where "only engineering problems remain," although he acknowledged that the severity of these problems is a matter of great controversy in industry.

Other EPA research programs in radiation, pesticides, noise, water quality, and the social effects of pollution would remain static or rise slightly in the new budget.

Elsewhere, the Interior Department cut $24 million from its Office of Saline Water, marking the end of a desalination demonstration program. The $2 million that remains will be applied to "basic" research in desalination. In what appears to be a pattern throughout the environmental sector of the budget, this reduction was offset by the creation in Interior of a $25-million contingency fund for energy R & D. Thus, a few selective increases appear to balance out a few selective cuts, leaving the overall funding picture essentially static.—R.G.

Military

With an initial "post Vietnam" budget of $81.1 billion, the U.S. military establishment would have by far the largest peacetime budget ever, yet it is caught in an increasingly tight and troublesome fiscal situation. For the Pentagon the "peace dividend" comes largely in the shape of a struggle to meet huge payroll and retirement benefit costs, bear up under inflation, and, at the same time, modernize its forces by buying incredibly expensive new weapons—for instance, $19-million fighter aircraft (the F-14) and $1-billion submarines (the Trident).

In fiscal 1965, the last year before the massive U.S. involvement in Vietnam, the military budget was about $50 billion. By fiscal 1969, at the peak of the Vietnam war, the military budget—all of these figures include military assistance to foreign nations and defense-related

spending of the Atomic Energy Commission—had increased by $31 billion to approximately its present size. Operational and force levels were of course much higher in fiscal 1969 than they are today. There were then 3.4 million uniformed personnel, some 1.2 million more than at present. Strategic forces then were at about the same strength as now except that today there are fewer B-52 bomber squadrons, but more missiles with multiple warheads. But conventional or "general purpose" forces—tactical air wings, attack and antisubmarine carriers, airlift and sealift forces, and so on—were all at higher levels 5 years ago.

Where, then, did the peace dividend go? There has been no decline in the military budget primarily because of two legacies of the Vietnam war—inflation and the "all-volunteer force," with its extraordinary high payroll costs. Economists seem to agree that the wartime inflation, which zoomed upward to an annual rate of more than 6 percent in 1970 before it was finally checked, resulted from the government's failure to raise taxes promptly and avoid a deficit when military costs began escalating in 1965 and 1966. The price index for defense as well as other federal purchases is now up by more than a third of what it was in fiscal 1964. The idea of an all-volunteer army gained political currency as the military draft became one of the detested symbols of an unpopular war. Accordingly, the goal of phasing out the draft—this has just now been completed—and creating an all-volunteer force was adopted by Richard M. Nixon in his 1968 campaign platform as a way to defuse the war at home.

To attract the volunteers, the Administration and Congress set about to increase military pay and did so with a vengeance. In 1964 the basic pay of an Army recruit was $78 a month; by 1972 it had risen to $332 a month. A sergeant's basic pay during this period went from $205 per month to $467, a colonel's from $985 to $2057. The budgetary impact of the higher pay scales and allowances for active duty personnel, plus increasing benefits for retired personnel, was to be enormous. In fiscal 1968 the budget (actual outlays) for the Department of Defense was $78 billion, and, of that total, 42 percent was allocated to manpower costs, 42 percent to "investment" (weapons procurement, research and development, and construction of facilities), and the remainder to costs of operations. Under the fiscal 1974 budget, however, the share for manpower has risen to 56 percent and the share for investment has declined to 29 percent. The one encouraging sign Pentagon officials have noted is that over the past year these percentages have held steady, with no further erosion in the investment category.

There is expected to be one modest peace dividend, part of which can be applied to modernization of forces. Preparation of the new budget was completed prior to the announcement of the peace agreement, but, by taking into account the continuing "Vietnamization" of the conflict, the budget does show a decline of $3.3 billion from the $6.2 billion to be spent during the current fiscal year in Southeast Asia. Whether there will be any additional "dividend" from the Vietnam peace is not yet known. Investment in weapons procurement, R & D, and construction of facilities will rise by about $1.3 billion. Allocations for basic research will go up by about $29.6 million, remaining at about $0.5 billion overall, and the total for all R & D increases from $6.5 billion to $7.4 billion (this stated in terms of "obligational" authority rather than of outlays).

Development of three new strategic weapons would be continued under the new budget—the so-called antiballistic missile "Site Defense," the B-1 bomber, and the Trident ballistic missile submarine. The Site Defense is designed to defend U.S. Minuteman missile sites. The Strategic Arms Limitation Talks (SALT) agreement bans any deployment of such a system beyond the existing installation at Grand Forks, North Dakota, and one for the protection of Washington, D.C. (which the Administration apparently now has no intention of building). Further development of the system is referred to in the budget document as a "hedge" against possible abrogation by the Soviets of the SALT agreement.

The Air Force hopes to buy 244 B-1 bombers over the next 10 years, at a cost of about $11 billion. The Navy intends to build 10 Trident submarines, at a cost of $13.5 billion (unofficially, there have been reports that the Navy hopes to build perhaps as many as 15 or more of these submarines). The need for Trident and the B-1 has been disputed by the Federation of American Scientists, which includes among its leaders such strategic arms experts as Herbert F. York (former director of Defense Research and Engineering), and by the Center for Defense Information, a new group headed by a recently retired rear admiral who has held important sea commands. The 1974 budget document indicates that the real purpose of moves to deploy new systems such as Trident and the B-1 is to "provide the Soviet Union an incentive for meaningful negotiations" in the new round of SALT talks. This, in a word, is the "bargaining chip" argument.

As the enormous fiscal problems manifest in the proposed budget make clear, however, there is reason to question just how many new bargaining chips the United States can afford to put on the table. A projection for defense spending in fiscal 1975—still another year ahead—shows outlays rising to $85.5 billion, or $4.4 billion over the outlays now proposed for 1974, with military pay and retirement benefits again the major factor in the increase. It will be ironic indeed if the "all-volunteer force" that has emerged as a legacy of Vietnam should turn out to be a built-in inducement to arms limitation.

—LUTHER J. CARTER

Space

The space program seems to be alive and well as it makes the transition into the post-Apollo era, despite recent fears at the National Aeronautics and Space Administration (NASA) that its activities might be cut back severely. NASA's fiscal 1974 budget of $3.1 billion is little more than half what its budget was at the peak of preparations for Apollo but is about the same size as this year's. Commenting on the new budget, NASA administrator James C. Fletcher pronounced the space program to be "balanced" and "surprisingly strong." Manned spaceflight activities will remain important, but with the unmanned and scientific activities claiming a larger share of the NASA budget than they have in the past. The experimental space station Skylab will be launched on schedule, in May of this year; the Apollo-Soyuz Test Project, the joint flight with the Soviets, will take place in the summer of 1975; and the first orbital launch of the space shuttle—the reusable vehicle intended to cut the cost of carrying astronauts and heavy payloads into space—is to come in 1979.

In the field of unmanned planetary exploration, a Pioneer mission to Jupiter and a Mariner Venus-Mercury mission