

department is the chief inheritor of the old Atomic Energy Commission, partially dismembered in the early 1970s (by the creation of the Nuclear Regulatory Commission) and which happily, perhaps even complacently, combined responsibility for the production of military fissile material with that for the sponsorship of civil nuclear industry. The underpinning doctrine, perhaps more symbolic than real, is important: scrupulously keeping the production of military fissile material in civilian hands, but rigorously separate from civil reactors, has been taken as a demonstration that the old friendly atom and the threatening bomb were separate, but that civilians were in charge of the material of which bombs are made.

But now the Department of Energy is brooding on plans that would blur the fine line between the civilian and military control of nuclear reactors. It is considering using one of its new plutonium and tritium production reactors to help with the development of civil reactor technology and, indeed, in the production of commercial nuclear power. The plans are motivated politically as well as financially. Senator James McClure of Idaho has been a vocal advocate of projects that would find a home at the Department of Energy's test facility in his state.

The Idaho Testing Station already houses the Experimental Breeder Reactor II, a liquid-sodium-cooled reactor with extremely attractive passive safety characteristics whose all-metal fuel can be burned more completely and reprocessed on site, thus offering a promising commercial power design. Its designers are not to blame that their project has been tainted by the failure of the Clinch River Project.

McClure's ambition is that Idaho should also become the home of another promising commercial reactor design, the modular high-temperature gas reactor. He has argued that the United States needs an alternative to the heavy water designs that have been used to produce tritium at Savannah River. He has taken pains to point to possible delays in commissioning a new heavy water reactor. His argument is probably well-founded, if not entirely innocent of special pleading. A second tritium source avoids scheduling problems and issues of vulnerability.

But the high-temperature gas reactor is not nearly as mature a design. Development alone will send the cost of the new reactor skyrocketing, which has discouraged some potential supporters.

The compromise — and a sensible one in some ways — is to help offset the cost of developing the new technology by concurrently developing technology for commercial power generation using the same or similar reactor designs.

Using military development for civilian applications has a long history in the United States. Civilian aviation was propelled by advances in military aircraft design, and certainly the Air Force's Titan 4 rocket is likely to launch civilian satellites, with everyone the better for it: the military gain a little extra money to offset development costs, and commercial or scientific interests get a desired product or service without having to pay the full cost.

The more insidious part of the Department of Energy's new plan is that of using the same reactor to produce electricity as well as tritium. This, supporters will argue, will lower the development cost of the reactor, and make use of valuable heat. But assigning to a power plant such disparate goals has long-term implications. It is the thin end of the wedge, bringing a military application to an essentially civilian function. Even if the safety issues raised by operating a dual-purpose facility can be resolved, the question remains whether joining both operations under one roof would be acceptable. If nothing else, it would be a rallying point for opponents of nuclear power, who have legitimate concerns about its use for electricity generation without adding the inflammatory role of maintaining mass instruments of destruction. Although it is gratuitous to suggest that the next step will be to use commercial aircraft as backup weapons-delivery systems, it is fairly certain that such charges will be heard if the Energy Department perseveres in its plans. □

## Nuclear muddle plan

*The UK government should delay the sale of its electricity monopoly until its mind is clearer.*

THE British government is faced with a different kind of nuclear conundrum, but one of its own making: how to arrange that there should be a nuclear programme of any kind under the intended arrangements for the electricity supply industry, which is to be converted from a public monopoly or nationalized industry, into a clutch of private monopolies under legislation promised for November. From the outset of what has been, in many ways, an imaginative policy for the disposal of publicly owned assets, it has been clear that the dependence of the United Kingdom to the tune of 15 per cent on nuclear power for electricity generation would be a snag. With a few strokes of a very broad brush, the Secretary of State for Energy, Mr Cecil Parkinson, last February described the way in which he planned to carve up an industry whose successes (and failures) have stemmed from its high degree of integration. According to the plan (see *Nature* 331, 466; 1988) there will be two generating companies (provisionally known as 'big G' and 'little G'), the larger of which will be responsible for nuclear generation. There will also be several regional distribution companies, free to generate their own electricity if they choose, who will between them own the national grid, by means of which efficient generating plants can be used preferentially.

These arrangements will apply in England and Wales, with broadly similar schemes in Scotland and Northern Ireland. The government intends to ensure a place for nuclear generation in this new pattern by requiring that the regional distribution companies should buy a certain proportion of their electricity from 'big G', and that a certain proportion of that should be generated from uranium. It will quickly be appreciated that this plan is an awkward compromise between the government's consistent adherence to the doctrine of the marketplace as the only sure arbiter of economic good sense and its admirable belief that Britain (and other similar countries) will need to rely on nuclear generation for the production of a substantial fraction of electricity production.

The most cogent criticism so far has come from the House of Commons Energy Committee, by no means a part of the anti-nuclear establishment. The committee was understandably concerned that coal and nuclear energy were being dealt with unevenly — British Coal (still nationalized) is to lose its protected market, but nuclear generators are to be given one for the first time. It also complained that the arrangements so far described only in outline will make it difficult to know what will be the cost of the government's continuing support for nuclear generation, and to know who is being required to pay for it.

What emerges from the fine print of the committee's inquiry is that these important questions have not yet been thought through. But the practical difficulties of pretending that the electricity supply industry is a series of independent private companies in competition with each other when one will be required to shoulder what may be the extra costs of generating a certain (variable) proportion of its electricity from a specified source makes a nonsense of the notion of competition: 'big G' will be required to operate nuclear plants if it proves to be uneconomic, but presumably there will be nothing to prevent 'little G' from joining in if the economic balance should tilt the other way. Before November, the government may yet be glad to embrace the Energy Committee's suggestion that a more transparent way of entrenching nuclear power would be through a third generating company.

But that is only one way in which British plans for privatizing electricity are half-baked. One has only to note that it had not been (last month) decided how prices were to be regulated to conclude that the best course would be to postpone the whole scheme for selling the industry for at least a year. □