

LETTER FROM SYDNEY



# The atom down under

**Australia has yet to get  
a nuclear power plant,  
but the future glistens**

by William A. Scholes

**A**ustralia has yet to build its first nuclear power station. Yet planners predict that by the year 2000, the island-continent will be humming along on as many as 40 such plants, producing a total of 20,000 megawatts of electricity.

What's the source of such optimism?

So far, admits Sir Philip Baxter, chairman of the Australian Atomic Energy Commission, cheaper sources of fuel, predominately coal, are available for the country's needs. But, he adds, the situation is on the verge of change.

By the end of the next decade, Sir Philip predicts, nuclear power generators of the 500-Mw class or larger will be economically competitive in the country's two main industrial states, Victoria and New South Wales. Fission won't be the only source of power, however; he predicts that each state will develop a balanced system with coal, hydroelectric and nuclear power complementing one another, with the additional possibility in Victoria of some use of natural gas.

If Australia's first few nuclear power plants also turn out to offer some hope for economical desalination of water, Western Australia and particularly South Australia are likely to make their own demands for atomic power. Major cities, however, are more likely than less-developed areas to be using nuclear-desalinated water in the foreseeable future, simply because the cost of such water for general irrigation is likely to be prohibitively high for several decades.

"In the long term," Sir Philip says, "it is probable that with very large plants, plus a good deal of technological progress, water at acceptable costs for irrigation may be possible some time in the next century. This could steadily extend irrigation areas in Australia, with profound effect."

In addition, nuclear stations will open a major export market for manufactured nuclear fuel elements, probably happily timed to just about when New Zealand is turning to nuclear power of its own. New technology, also with export potential, will result, as will isotopes and radiation sources that will play an increasing role in scientific research.

Increased interest in nuclear power generation and easing of export restrictions have already led to an upsurge in exploration for uranium, as well as an improvement in price. Australia now has enough uranium to fuel 10 reactors

of the 500-Mw class for 25 years, estimates National Development Minister David Fairbairn, including a \$34 million stockpile at the Lucas Heights reactor near Sydney.

Also, because of the favorable light that is beginning to shine on nuclear power for public consumption, 35 companies are now hard at work, searching for uranium in the Australian outback. And the likelihood, the Australian Federal Government believes, is that they'll be successful. The reason is that more than a third of the continent's surface is Pre-Cambrian shield rock, which is favorable for uranium deposits.

A strong booster for the spirit of the hunt is Sir Philip, who, at a recent conference in Melbourne on Australia's nuclear-powered future, predicted that some \$5.6 billion will be spent on atomic power stations over the next 30 years.

At the same conference, Fairbairn suggested that a small committee be set up to coordinate proposals for the country's first nuclear station. Such a committee would include representatives from the individual states, as well as Australian AEC and Development Department officials.

The two leading candidates for the site of the station, both in New South Wales, are the Australian capital of Canberra and Jervis Bay, also in capital territory but on the coast. At either site, the station would be financed jointly by the Federal Government and the state; a feasibility study on a station at the two sites is due to be completed by next month. The next step will be for the Federal Government to request bids from firms interested in constructing the plant, and after a selection process the project should be ready to proceed.

Once the initial station is operating, the pace of development will no doubt quicken. By 1980, estimates Sir Philip, there will be three 500-Mw stations completed or underway. A decade later, the number will have grown to 10, and by the turn of the century, some 40 stations should be lighting, powering and perhaps watering Australia with 20 billion watts of electricity. Even the high cost of general irrigation, he says, will not keep increased abundances of fresh water from the cities, and the year 2000 is likely to find Melbourne, Adelaide and Sydney having their thirst quenched thanks to the same atomic reactions that are helping them run.