

virus called SV40 and a mouse virus called polyoma virus, are being used in such experiments.

The committee eventually assigned all such experiments to very high physical containment facilities, according to a set of guidelines drawn up by a group of animal virologists, including Berg and Singer, who were present at the committee meeting as consultants or observers. Berg apologised for bringing in such complicated proposals at a late stage in the proceedings. Another committee member reflected that such last-minute proposals indicate the speed with which the field is moving, and that he would like to keep it moving, a statement which Berg labelled "self-serving".

After the meeting was over, Berg said that he was happy with the final draft, and indicated that it had tightened the restrictions in areas which

bothered him in the Woods Hole recommendations. He said that he believes the final recommendations "have incorporated the spirit of Asilomar".

Although the committee has demonstrably accepted strict regulations, it is nevertheless open to the charge that its deliberations have had no input from the general public. The committee consists entirely of scientists, some of whom are using, or planning to use, the cloning technique, a fact which has already raised suggestions of conflict of interest. But the stringency of the regulations is such that those criticisms can easily be blunted.

The committee's report should be available in a few weeks. The recommendations will go to the Director of the NIH, who will probably accept them, and they will eventually be used by the NIH in awarding grants for such research. □

Concorde Mark II?

WITH Concorde due to commence passenger services on January 21, and a decision awaited from the US Government clearing it for the Atlantic run, the prospect of a "second-generation" supersonic airliner was aired last week by the Vice-chairman of Rolls-Royce (1971), Mr Kenneth Wilkinson, when he delivered the annual Wright Memorial Lecture to the Royal Aeronautical Society in London.

Concorde, he said, was expected to demonstrate the value of supersonic air transport for a sufficiently important segment of the market to justify a second-generation version for service in 10 to 15 years' time. The indications were that such an aircraft could be produced profitably with "acceptable noise characteristics and economic operation at less than first-class fares".

ENERGY needs for Egypt's projected population of 220 million in the year 2100 would demand the construction of two Aswan High Dams a year; water requirements demand the equivalent of two extra Nile Rivers, making desalination essential. Only nuclear energy offers the means to fulfil these demands. The agreement signed with Washington during the recent visit of President Sadat to the United States involves two light water power reactors, using boiling water if Westinghouse is brought in or pressurised water if General Electric is.

The International Atomic Energy Agency (IAEA) and the General Egyptian Electricity Corporation (GEEC) estimate that Egypt will be using nuclear energy to cover 50% of its energy needs for electricity and desalination by the year 2000 and will need 20,000 tons of uranium concentrate for the reactors—the equivalent of 400 million tons of oil.

Cumulative uranium requirements for power and desalination programmes were found to be in the range of 19,000–25,000 tons in case of a heavy water reactor (HWR) strategy, and 30,000–40,000 tons for a light water reactor (LWR) strategy. In the year 2000 alone, the demands are expected to be 2,000–2,500 tons and 3,200–4,000 tons, respectively.

These needs make intensive uranium exploration, coupled with a suitable reactor policy, essential to the development of a local nuclear fuel cycle technology. These matters are now under study, but the first atomic power plant (EFAPP), together with the two American reactors which will be constructed at Sidi Kreir near Alexandria and

should be operating in 1982, will be of the LWR type. No final decision on subsequent nuclear power stations has been taken.

Estimates of the water demands for agricultural, municipal and other purposes suggest a deficit of 2×10^9 – 3×10^9 m³ by 1980, increasing to 17×10^9 – 18×10^9 m³ by 2000. Nuclear desalting would make up part of the shortfall—about 4×10^9 – 5×10^9 m³—in the year 2000. The power requirements will be around 9,000 MWe.

Letter from Egypt

from Salah Galal, Cairo

This means a nuclear programme 50% greater than that projected by the GEEC for nuclear power is needed.

● Ahmed Sultan, Egypt's Minister of Electricity visited Paris recently to discuss the purchase of two more nuclear reactors, which will be in addition to the two American reactors. During last week's state visit to Egypt of the French President, Valéry Giscard d'Estaing, the two countries signed an agreement providing for the construction of a 600 MW nuclear power plant in the Nile delta area. The plant is due to go into operation in 1984.

● The Animal Bioclimatology Unit of the Egyptian Atomic Energy Establishment has decided to take part in agriculture and livestock projects which might help remedy deficiencies in the country's food production. It is believed that radioisotopes can be used to improve productivity in hot desert areas:

Professor Taymour Kamal, who heads the unit, has used radioisotopes and tracer techniques to develop new methods for predicting heat tolerance in farm animals. Young animals selected for hot areas would be expected to have high productive potential after growing in the Sahara's hot climate. Kamal has criticised conventional heat tolerance indices as unrelated to the productive performance animals, and says his tracer methods measure directly the animal's loss in body fat and lean mass.

One of his methods is based on a 3-minute count of radioactive ⁴⁰K occurring naturally in the animal's body before and after exposing it for 3 days to a temperature of 32 °C. The loss of lean tissue can then be calculated since the radioactive potassium exists in a definite and constant ratio to all natural potassium, which is found in fairly constant concentration in lean tissue. Young animals which show little or no tissue destruction during the heat exposure are considered heat tolerant and suitable for raising in hot areas.

A second tracer method measures both the lean tissue loss and the fat loss. This is based on a determination of the total body water of the animal before and during the 3 days of heat exposure. These figures are subtracted from the corresponding live body weights to obtain the total body solids, mostly fat and protein, before and during heat stress. The animals screened have shown great variation in the percentage loss of body solids ranging from 0.2% to 24.5%. Those animals which show a small loss are considered heat tolerant. Other tracer methods for heat tolerance are still under investigation in the unit.