Project Independence and future R&D

Achieving the Administration's goal of domestic energy independence will require strong Government policies in the short term and massive research and development and a shift toward an electric economy in the long term, according to a report by the Federal Energy Administration. Alvin M. Weinberg, director of Oak Ridge National Laboratory for 18 years and now director of the FEA's Office of Energy Research and Development, briefed the press last week on the long-range R&D aspects of Project Independence.

The target date for reaching energy independence is 1985. Meeting this goal seems unlikely, but R&D budgets and efforts should be stepped up now, Weinberg says, if viable energy options are to be available within this century. Only existing energy technologies and those on the verge of commercial operation can make a dent by 1985, the report states, so short-term priorities and policies must be designed to encourage the rapid development and efficient operation of these technologies.

Weinberg outlined three Government options for meeting domestic energy requirements before 1985: Increase the supply of petroleum, natural gas and coal and shale synthetic fuels through advanced exploration, drilling and recovery methods; begin to shift consumption from liquid fuels to coal and uranium-generated electricity by encouraging developments in coal combustion, stack gas clean-up, coal mining and existing nuclear power technologies; support conservation technologies by improving the energy efficiency of the automobile, eliminating wasteful industrial practices and decreasing household energy consumption.

Scientific research can make its biggest impact on long-term alternatives, Weinberg says, those which come on line between 1985 and 2030. Domestic oil and gas production will peak in the mid-1980's and become "insignificant" by 2030, the FEA report states. To meet demand for liquid fuels in the waning years of production, synthetic fuels will be needed, and massive development of the coal gasification and liquefaction and oil shale industries must be started now. Although Weinberg and the FEA report insist the agency is only listing options and not making recommendations, the report does include "optional" R&D funding levels. Synthetic fuel research funding would be more than doubled by 1975.

The shift to electricity would require the lion's share of R&D funds and effort. Weinberg cast a pall on the future of the liquid-fueled automobile and previewed a future source of energy consumption by pointing up the need for electric vehicles for personal and mass transportation.

The increasing demands for electricity could be met, the report states, if nuclear, solar and geothermal industries are developed. The breeder reactor continues to be the Government's priority energy R&D program, and the FEA proposes that its budget be doubled by 1975 to receive 65 percent of the total budget for nuclear-fission research. Weinberg says the breeder won't supply more than 10 percent of nuclear-produced energy by 2000. All nuclear sources combined could provide 50 percent of the electricity by then, he says.

Weinberg says solar energy "must be pursued aggressively," but warns, "Solar will be great for heating and cooling, but solar electric looks like an expensive alternative." The American people someday may be confronted with the choice, he says of nuclear power—relatively cheap but with potential hazards—and solar power—expensive but safe. The reports suggests a 12-fold increase in solar R&D budgets for 1975. Geothermal and fusion

Weinberg: Switch to electricity

budgets should be pumped up by 1975 too, Weinberg says, but the size of their impact on future power generation is still a matter of conjecture.

The FEA report will be considered along with energy-option reports from other agencies, and eventually will go to President Ford. He will review the options and report them, presumably with his Administration's chosen priorities, in an energy message early next year. A package of proposed legislation to set the priorities in motion will then be delivered to Congress, an FEA spokesman says. □

EPA criticizes atomic assessment

The Environmental Protection Agency has issued a report critical of the recent Atomic Energy Commission study on reactor safety (SN: 8/31/74, p. 117), saying that risks of death and injury from reactor failure may be ten times as high as the official estimate. EPA also rated as "inadequate" and AEC environmental-impact statement on the management of long-lived radioactive wastes.

The so-called "Rasmussen Report" has previously been criticized for not adequately taking into account the risk of human error in operating nuclear reactors or the efficiency of evacuating local personnel in the event of an accident (SN: 11/23/74, p. 330). Now, the EPA assessment says that if latent health effects, such as cancer caused by residual low-level radiation after an accident, are taken into account, the estimate of risk could be low by a factor of four. The EPA scientists also say the assumed evacuation model is overoptimistic by several times.

While praising Rasmussen and his colleagues for producing an "innovative forward step" in assessing nuclear risk, the EPA report criticizes the implication of the AEC study that such estimated risks are within "acceptable" limits. Such a conclusion would be misleading, concludes W. D. Rowe, deputy assistant administrator of EPA's Radiation Programs, because "judgments on 'risk acceptability' are very complex, with comparative risk evaluations representing only one of numerous inputs which must be considered." EPA scientists would also like the AEC to use the new methodology to assess the relative safety of conventional reactors to others now proposed, such as the high temperature gas reactor.

The agency's reaction to the AEC's plans for storing long-lived and high-level radioactive wastes (principally transuranic elements such as plutonium) was that not enough effort has been given to finding a permanent solution in the context of an "overall waste management program." Instead, "the AEC has reversed the importance of the overall program," concentrating on temporary storage of the dangerous materials. Specifically, the EPA criticizes plans to construct a centralized Retrievable Surface Storage Facility, and suggests more emphasis should be placed on determining what geological formations would be stable enough to ensure safe long-range storage. Regardless of the large amounts of such materials to be generated in the future, the current level of wastes already provides compelling reason to seek an "ultimate disposal method." □