fourth is said to have been picked but his name not yet made public. Head of the nuclear division is Milton Levenson, who was associate director for energy and environment at the Atomic Energy Commission's Argonne National Laboratory. Director of the nonnuclear division is Richard E. Balzhiser, most recently assistant director of the Office of Science and Technology and former chairman of the chemical engineering department at the University of Michigan. Research in Balzhiser's division is being grouped into two categories, fossil fuels and advanced systems, with an assistant director for each category. George R. Hill, former director of the office of coal research in the Interior Department, has been named assistant director-fossil fuels and will direct EPRI research dealing with fossil fuels and conversion technologies.

Director of EPRI's energy systems, environment, and conservation division is Sam H. Schurr, who came to EPRI from Resources for the Future, Inc., the nonprofit research organization in Washington. Schurr is an economist and worked previously for the RAND Corporation and the Federal Bureau of Mines.

EPRI officials say the institute will not have an institutional bias toward any particular fuels or systems. In a statement made at a news conference in February, Starr said, "In view of the variety of future technologies in the R & D pipeline (like fusion and solar power, for example), and the uncertain feasibility of a plurality of near term engineering concepts (such as pollution abatement, and coal gasification), it is now essential that the utility industry maintain an overview of, and participation in, all technical areas so as to keep its options open and to move flexibly in new untraditional areas. This is EPRI's broad purpose—which can serve both the utilities and the nation."

EPRI will do "analytical research" of its own, but no in-house physical research, says Starr. The expectation is that EPRI will have about 100 professionals on its permanent staff and perhaps another 100 from industry, government, and the universities working with EPRI on a temporary basis. The stress will be on management of research. EPRI hopes to stimulate "a tremendous amount of university participation," says Starr. "We need high caliber people and we need to bring new people into the industry." EPRI plans a sizable graduate fellowship program and other incentives to accomplish this.

The Palo Alto site was picked for EPRI only after a survey designed to identify the site most favored by prospective EPRI recruits. Starr says the best scientists and engineers were asked where they'd like to live, and the San Francisco Bay area won hands down. EPRI has moved into an office building owned by Itek Corporation in the Stanford industrial park.

EPRI is supported by both investor-owned and publicly owned companies, and the 15-member board of directors has 10 members representing the private utilities and 5 representing the public companies. Currently, the chairman is James E. Watson, manager of power of the TVA, and the vice chairman is Shearon Harris, chairman and president of the Carolina Power and Light Co.

There will also be an advisory council which is intended to reflect a "national cross section" of views and is to have access to all EPRI information, says Starr. The institute is also building a structure of technical advisory committees "comprised chiefly of experienced utility industry personnel." These committees are designed to mesh with the organization of the EPRI technical staff.

EPRI funding is to come only from operating utilities, and the institute is not seeking money from anybody else. EPRI, however, expects to undertake joint research efforts with manufacturers and government agencies.

Europe Joins in Shuttle Project

On 24 September, after 4 years of negotiations and the day before the successful return of the second Skylab crew, the United States and nine European countries signed an agreement for the latter to design and build a laboratory unit to be flown in the space shuttle. The agreement appears to commit the U.S. government irrevocably to going ahead with the shuttle, a project—controversial from the standpoint of scientific and other nationtal priorities—on which at least $8 billion will be spent by 1981.

The memorandum of understanding was signed by James C. Fletcher, administrator of the National Aeronautics and Space Administration (NASA), and Alexander Hocker, director general of the European Space Research Organization (ESRO). Originally, ESRO had toyed with the idea of building a space tug designed to boost payloads into orbits above the shuttle, but they settled on contributing a "spacelab," which would cost about half as much, or $300 to $400 million.

The spacelab will be comprised of a pressurized module, where scientists can work in a shirt-sleeve environment, and a platform for instruments, which will be directly exposed to space. The lab is for missions that would last from 7 to 30 days. Europeans will be included in the crews.

According to the memorandum, ESRO pays for the first spacelab; any subsequent ones NASA wants, it can order from ESRO and pay for itself. If all goes on schedule, the first spacelab will be delivered in late 1978, in time to be ready for their first shuttle flight a year later.

Of NASA's $3-billion budget for fiscal 1974, $475 million has been allocated to shuttle development; the amount is expected to go as high as $1 billion a year during the shuttle's 6-year development period.

Many scientists oppose shuttle development at this time because it will eat into NASA's budget for other space applications (the total budget is expected to remain level for the rest of the decade). But it appears that the arguments of critics have been seriously undermined by the completion of two Skylab missions—and as one NASA official said, "successful recovery from a very bad beginning helped an awful lot" in convincing the Europeans of the wisdom of their investment.

The nine participating European countries are Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Switzerland, and the United Kingdom. More nations may join in the future.—C.H.