

Soviet science centre

Leningrad's energetic future

A NEW science centre is to be established in Leningrad, Academician Guri Marchuk, chairman of the Soviet State Committee for Science and Technology of the USSR, announced recently. During the past 25 years, a number of science centres have been established in the Soviet Union, the best known being the Siberian Branch of the Academy of Sciences of the USSR, based in Novosibirsk, which Dr Marchuk himself headed for several years. During the last two quinquennia, the establishment of such centres has figured prominently in the state plans, and has generally involved little more than the formal linking of existing research facilities in the area with local industry, in order to build up the research and development base of the latter.

Leningrad, however, has a long scientific history — indeed (as St Petersburg and then Petrograd) it was until 1934 the home of the Academy of Sciences, and it still houses many important scientific institutions.

The new centre will bring together all the institutes in and around Leningrad and will be aimed at developing not the whole science base but a particular sector — energy. In the Leningrad region, there exists a concentration of energy-related design bureaux, factories and institutes, fifteen of which, Dr Marchuk said, have already been united into “virtually a complete complex”. The designing of radically new energy equipment will therefore be the most important subject tackled by the new centre.

Considerable work has already been undertaken in this field. Long-term plans for the Leningrad region (up to the year 2005) include the development and construction of a thermonuclear (fusion) power station, which, it is hoped, may be commissioned before the end of the century.

Another innovation is a “cryoturbogenerator”, employing the principles of superconductivity, with a promised efficiency of 99.5 per cent. An experimental model is already reported to be in operation, and a full scale model (300 MW) is promised by the end of 1995. Of less theoretical significance but still a major innovation is the production, by the Izkovskii works (in conjunction with the Atom-mash plant in Volgodonski), of the first nuclear power station for urban heating, which will be sited in Gorkii on the Volga — a city of 1 million inhabitants. The construction of 12 such urban heating plants promised for the cities of the western parts of the Soviet Union before the end of the century does not, apparently, cause any alarm to Soviet environmentalists.

Such a nuclear district heating system will eventually serve not only the four million inhabitants of Leningrad but also several industrial enterprises.

In addition to the manufacturing plants which produce generating equipment — *Elektrosila* and the Leningrad Metal Works among others — the area also houses *Gidropromekt* which carries out major surveys before construction of hydroelectric power stations (its research department recently developed an encapsulated television camera for lowering into test boreholes), and the Vyborg shipyard which has now started production of drilling rigs for use in the Baltic (previously these were constructed only at Astrakhan for use in the Caspian Sea). The All-Union Institute of Halogens and the Leningrad Pigment Association. These latter two bodies, although not apparently energy related, have it appears an important role in the energy sector — producing anti-corrosion and waterproofing materials for the underground structures of power stations.

How significant the new science centre will prove to be in the general context of Soviet science is difficult to judge. Formally an organ of the Academy of Sciences, it was not considered of sufficient importance to merit a mention in the *Pravda* reports of the annual general meeting of the academy last March. During the past 50 years, Leningrad scientists have felt they are no longer at the true centre of things, that Moscow is the true focus of Soviet science. The new centre is promised a special science village in the Shuvalo suburb of Leningrad. How far the new, utilitarian, centre will satisfy the aspirations of Leningrad scientists for a more central place in Soviet science remains in some doubt.

Vera Rich

US space programme

NASA will wait and see

Washington

THE National Aeronautics and Space Administration (NASA) has decided to postpone launching the second of its sophisticated new communications satellites until it discovers why the first, launched last month by the space shuttle Challenger, failed to arrive in its proper geosynchronous orbit. Postponement of the launch, originally scheduled for August, will impair but not stop the first flight of the European Space Agency's Spacelab a month later.

Plans for the Spacelab mission were based originally on the assumption that both new TDRS (Tracking Data and Relay Satellites) would be fully operational in time to handle the large volume of data generated by the 24 European and 13 United States experiments Spacelab will perform. NASA and the European Space Agency have nevertheless decided that Spacelab's 30 September mission will be “scientifically viable” as long as one TDRS

Perpetual motion?

“STILL it moves!” Galileo is supposed to have muttered 350 years ago, after his imprisonment by the Inquisition for his belief in the moving Earth and other impious doctrines. “Still it moves!” one could say on Monday, when Pope John Paul II delivered a most cautious and uncommitted speech on the subject to a meeting of scientists, including 33 Nobelists, in Rome.

In a piece of classic prevarication — no doubt enforced by ultra-conservative elements in the Church — the Pope announced the establishment of a committee,



Professor Zichichi and Pope John Paul II

an “interdisciplinary research team for the careful study of the whole question”. There are good grounds, said the Pope “for hoping that it will make an important contribution to the examination of the whole question”. Still it moves, still it moves!

The meeting, addressed by Pope John Paul II, was convened by Professor Antonino Zichichi, president of the Italian institute for nuclear physics, in honour of the Galileo anniversary, and will continue for a day and a half to review progress in science since 1633. Clearly Professor Zichichi will have to continue longer with his efforts to persuade the Church finally to rehabilitate the “father of science”. Robert Walgate

is operating properly.

It is still possible that the second TDRS will be launched in August as planned, provided that NASA is confident that there will not be a repeat performance of last month's mishap. Unless the second satellite is launched, however, Spacelab's September mission will depend on NASA's success in manoeuvring the first TDRS into its proper orbit. A series of engine firings aboard the TDRS was due to begin last week in order to shift the satellite out of its present elliptical orbit.

A successful re-alignment of the TDRS will enable the shuttle orbiter Columbia to carry Spacelab into position in September but the absence of a second operational TDRS will reduce the scope of the experiments Spacelab will perform. A spokesman for the European Space Agency said that no experiments would have to be cancelled, but some would produce about 25 per cent less data than planned.

Peter David