

25 years of INFN

Claudio Villi, former President of INFN, speaking at the official ceremony to mark the 25th anniversary of INFN in the splendour of the Campidoglio in Rome. The President of Italy, Giovanni Leone, is in the front row of the audience third from the left.

(International Press Photo)

The Istituto Nazionale di Fisica Nucleare, INFN, in Italy is celebrating its 25th anniversary. A ceremony was held in Rome on 15 December 1976 at the Campidoglio in august company — Giovanni Leone (President of the Italian Republic), F.M. Malfatti (Minister for Education), M. Pedini (Minister for the Co-ordination of Scientific and Technological Research), the Deputy Mayor of Rome, Members of Parliament, of other State Institutions and of the Diplomatic Corps.

During the ceremony Claudio Villi, former President of INFN (from 1970 to 1975) recalled the work of INFN which has strengthened, both in Italy and outside, its role as the leading national research organization. He illustrated the perspectives of present research in the field of particle and nuclear physics, its impact on culture and its 'fall-out' in many other fields of research and technology.

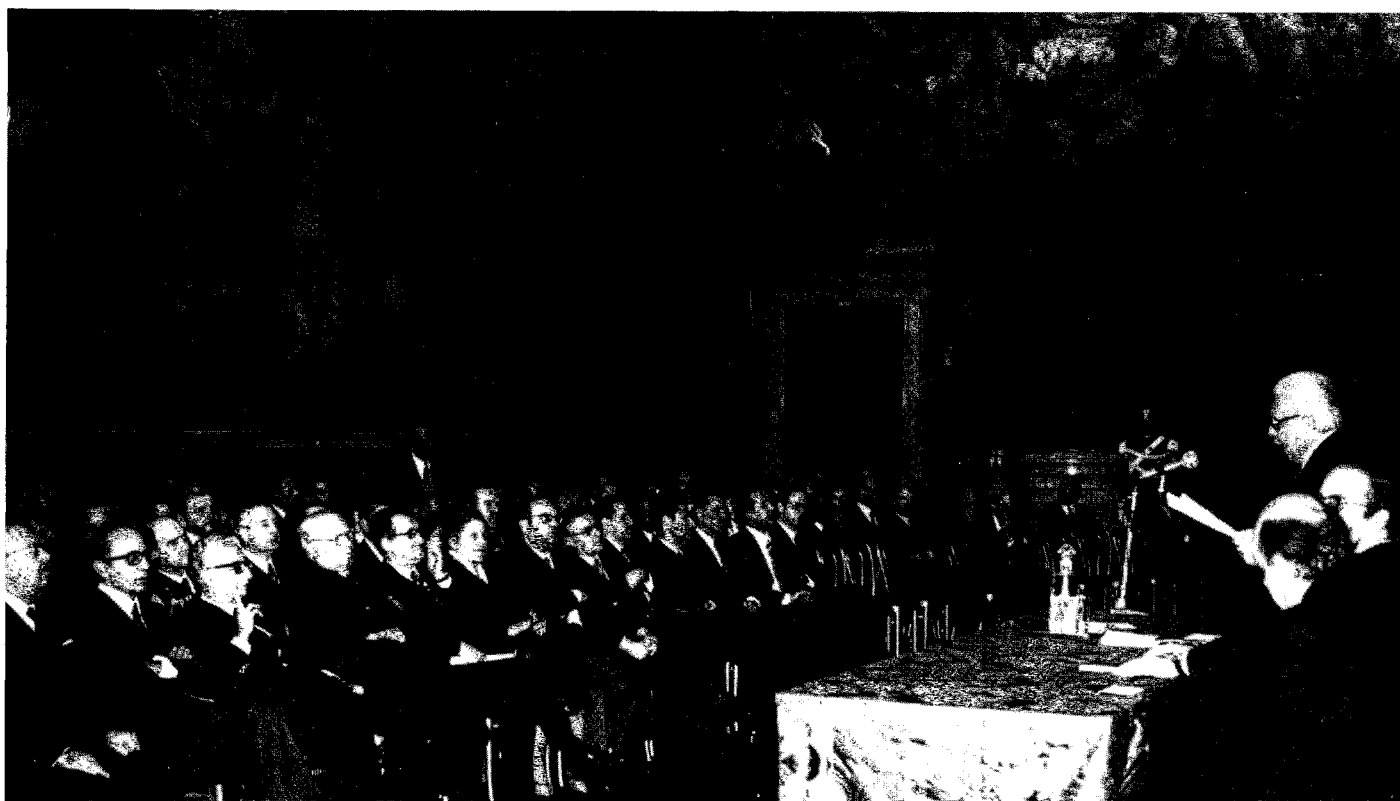
In his reply, the Minister for Education stressed the importance of the scientific policy of INFN which operates within the Italian Universities enabling them to participate in particle and nuclear physics research at the highest levels. He gave assurance that the Government would continue to support the development of this research and the work of INFN in particular.

INFN was constituted in 1951 within the Italian National Research Council with the task of promoting, co-ordinating and performing experimental and theoretical research in the field of fundamental nuclear physics, when individual university groups could no longer cope with the increasing complexity, both technical and organizational, of experimentation in this field. The first President was Gilberto Bernardini and under his Presidency the Laboratorio Nazionale di Frascati (LNF) was founded and

equipped with an electron synchrotron of 1 GeV.

During the term of office of the second President, Edoardo Amaldi (1960-1965), the INFN groups increased their activities at CERN and began construction of the electron-positron intersecting storage rings known as Adone, at LNF. The third President was Giorgio Salvini (1966-1969). In 1967, INFN became an Institution under public law in Italy and became autonomous from the Comitato Nazionale per l'Energia Nucleare (CNEN) in which it had previously been incorporated. LNF, however, remained within CNEN. During the same period, the Padua Laboratori Nazionali di Legnaro (LNL) were instituted for nuclear physics research, in the framework of an agreement with Padua University, and experiments started at Adone.

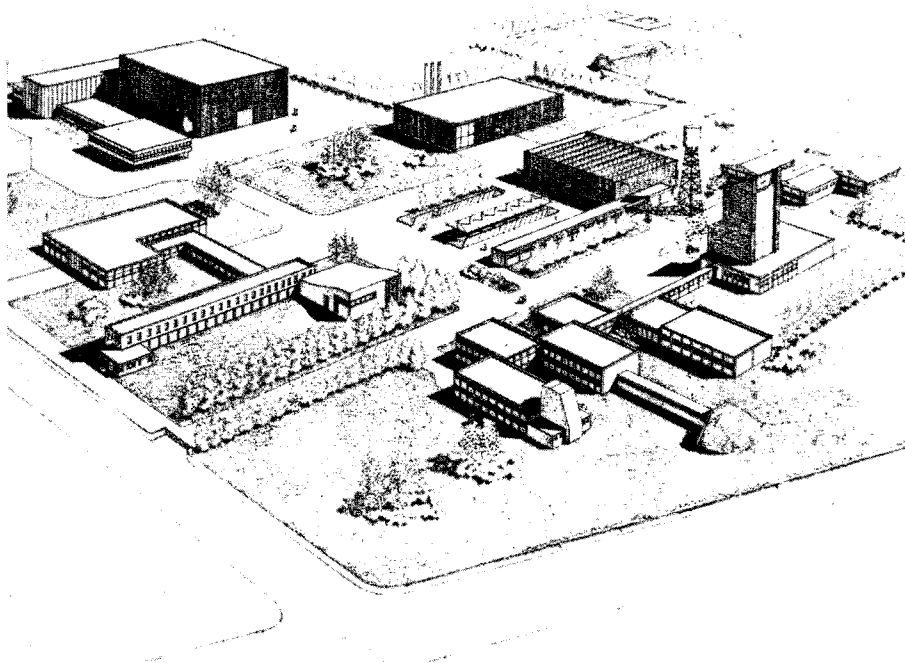
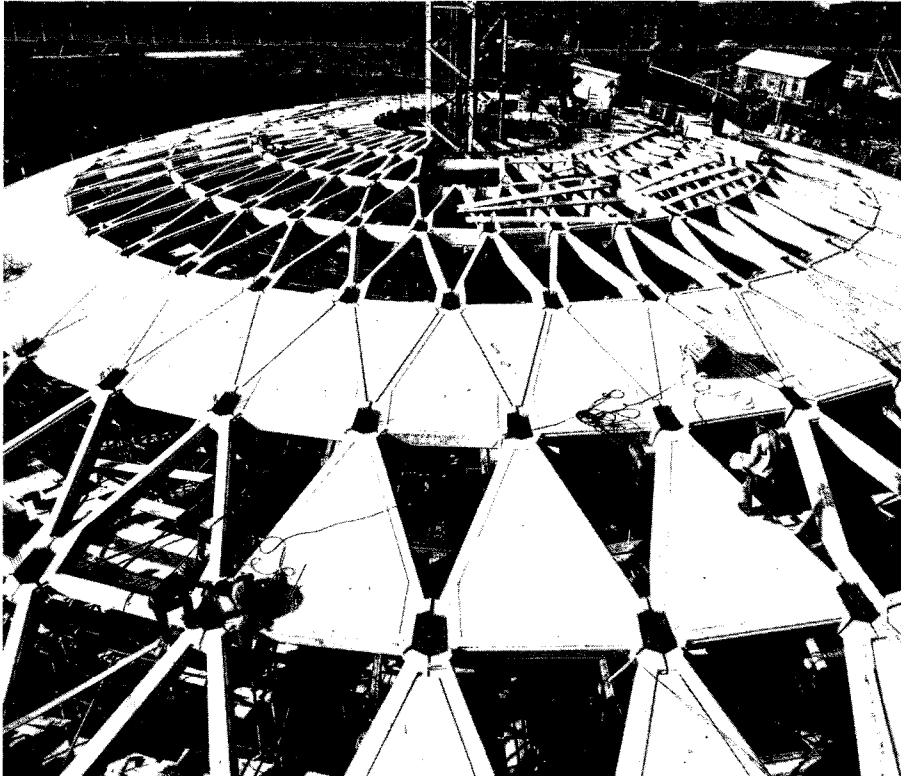
In the past six years, under the Presidency of Claudio Villi, INFN has



Photograph taken in 1966 during the construction of the large dome which tops the building housing the electron-positron storage ring, Adone, at Frascati. Adone has been INFN's major national instrument for particle physics in recent years.

(Photo CNEN)

An artist's drawing of the Laboratori Nazionali di Legnaro at Padua, one of the INFN's research centres. The buildings on the right are already in occupation and the large hall, drawn top left, will house a 32 MV heavy ion tandem Van de Graaff which is part of INFN's present five year plan.



been granted complete autonomy and full recognition as the Italian public agency responsible for the research in the field of fundamental nuclear physics, both in Italy and outside. In particular INFN ensures the promotion, the co-ordination and the financing of the Italian research activities carried out at CERN.

In 1974, the Interministerial Committee for Economic Planning (CIPE) decided to transfer LNF from CNEN to INFN and approved the INFN 1974-1978 five year plan, which contains provisions for Italian participation in experiments at the CERN 400 GeV proton synchrotron, the SPS, and for the development of facilities for nuclear physics research. These are a 32 MV tandem for heavy ion beams at LNL, a 12 MV tandem at a new Laboratorio del Sud at Catania, and a polarized monochromatic gamma beam at LNF which will be produced by the interaction of a laser beam with the electron beam in Adone.

At present INFN has seventeen research units: the National Centre for the Analysis of Photograms (CNAF, Bologna), the two National Laboratories of Frascati and Legnaro and fourteen sections in the Institutes of Physics at the Universities of Turin, Genoa, Milan, Pavia, Padua, Trieste, Bologna, Florence, Pisa, Rome, Naples, Bari, Catania and the Istituto Superiore di Sanità in Rome. A research group from the University of Messina is associated with the Catania section, a research group from the Polytechnic Institute is associated with the Turin section and a research group from the Scuola Normale is associated with the Pisa section.

INFN has its operative centre at Frascati. Its decision taking body is a Council composed of the Directors of the research units and representatives of CNR, CNEN, the staff and the controlling Ministries. The Council appoints an Executive Board of four

Around the Laboratories

members who collaborate with the President of INFN. The President is appointed by the Italian Government with advice from the Council. Advising the Council itself there are five consultative Commissions, one for each sector of research, whose members are elected by the researchers.

The distribution of the sections gives INFN the closest possible co-operation with the Universities. It allows INFN to make a substantial contribution to further developments of fundamental physics research within the various Institutes of Physics and to promote teaching in physics with particular emphasis on the fundamental nuclear physics sector.

The direct allocations by the Italian Government for the research activities co-ordinated by INFN (including the contribution to CERN), increased from 14.8 GLire in 1970 to 37 GLire in 1976 and will rise to 51 GLire for 1977.

The INFN is now under the Presidency of Alberto Gigli Berzolari, and is beginning to evolve its next five year plan covering the period 1979-1983. It will aim to continue to contribute to the economic and cultural development of Italy.

STANFORD All hands talk

Professor Panofsky gave his customary 'State of SLAC' talk to the staff on the Stanford Linear Accelerator Center on 19 January. The following report is culled mainly from the talk with some additional information on the proposals for the first PEP experiments.

President Ford's budget proposal for fiscal year 1978 beginning 1 October (which it is hoped will survive the subsequent administrative changes in the USA), contains a 12% increase in SLAC's budget compared to 1977. Most of this will be eaten away by the inflation factor which this year will be unusually severe (about 10%) because of an anticipated doubling in electrical power charges, but there is, nevertheless, a budget growth of a few percent reversing the trend of recent years. The budget growth will allow a modest increase in the experimental programme.

The 4 GeV electron-positron storage ring, SPEAR, will be used in a new series of experiments aiming at more detailed study of the 'new physics' which has emerged since the discovery of the psi particles. At the end of 1976, the 'iron ball' experiment was moved out of east interaction area and has been replaced by the 'DELCO' experiment (see October issue, 1976). The famous magnetic detector, Mark I, which found the psis, will be replaced by an improved version, Mark II, during a four month shutdown of the accelerator and storage ring beginning in July. In particular, the new range of detectors developed for SPEAR will have improved abilities for the observation of neutral particles emerging from the electron-positron interactions.

SPEAR is also the scene of the synchrotron radiation research in the

SSRP (Stanford Synchrotron Radiation Project) which looks destined for considerable development in the coming years. The President's budget has 2.8 M \$ earmarked for SSRP expansion in fiscal year 1978 with an additional \$ 2.8 million proposed for the subsequent two years. There is a tentative agreement to give 50% of SPEAR time to this research when PEP begins operation and there are plans for seven new beam ports to support many more experiments.

At the 22 GeV electron linear accelerator, the large aperture solenoid spectrometer, LASS, is now in regular operation and demonstrating its voracious appetite for data. It is a general purpose facility and many experiment proposals have been put forward to use it. The hybrid bubble chamber facility, based on the rapid cycling (ten or twelve cycles per second) 40 inch chamber, also has many experiment proposals for its use in a variety of configurations. The large magnetic spectrometers still have a full list of experiments particularly with polarized electron beams. A Spectrometer Workshop is to study the future of these monsters which have been the major work-horses of the SLAC experimental programme for the past ten years.

On the linac itself, the SLED project will progressively increase the peak energy capability. The SLED scheme squeezes more power into the beam at the expense of pulse length. Over eighty SLED assemblies have been built and tested and many are installed at the linac. The present plans are to take the energy of 35 GeV but further extension would be possible if the physics calls for it.

During the long shutdown for the installation of the Mark II detector at SPEAR, construction of the tunnels for the Berkeley/Stanford 18 GeV electron-positron storage ring, PEP, will begin. The construction schedule has been advanced to take advantage