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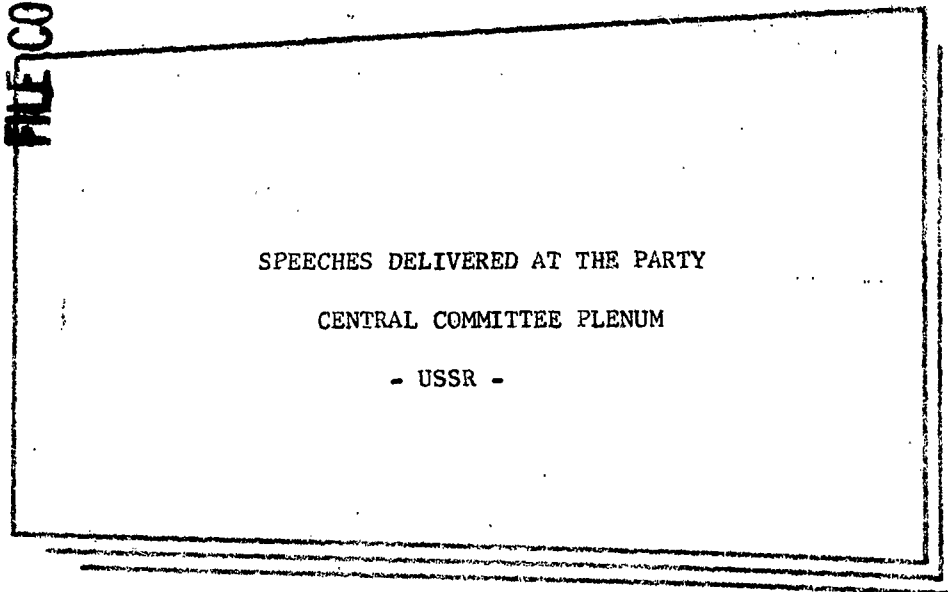


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SPEECHES DELIVERED AT THE PARTY

CENTRAL COMMITTEE PLENUM

- USSR -

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FOREWORD

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SPEECHES DELIVERED AT THE PARTY
CENTRAL COMMITTEE PLENUM

- USSR -

[Following is the translation of several speeches in the Russian-language newspaper Pravda (Truth). Complete bibliographic information accompanies each article.]

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THE SPEECH OF COMRADE M. V. KELDYSH

(President of the USSR Academy of Sciences)

[Following is the translation of a speech given by M. V. Keldysh at the Plenum of the Central Committee of the CPSU in the Russian-language publication Pravda, 23 November 1962, pages 3-4.]

Comrades! In the report of Comrade N. S. Khrushchev, he pointed out a number of organizational matters which will make it possible to fundamentally improve the leadership over industry and agriculture in our nation. The development of science is inseparable from the development of industry and agriculture. In the report, special attention was paid to the role of technological progress and it stressed the very important significance of science in this affair. Undoubtedly, the resolution of the present Plenum will be of enormous significance for fulfilling the magnificent tasks raised by the Program of the Communist Party for creating the material and technical basis of the world's first communist society.

I would like to take up a number of questions concerning the development of science which, as it seems to me, are at present of cardinal significance for developing the national economy. There are three branches which form the basis for any production. This is power production, rational materials and initial compounds, and the methods and means for measuring, controlling and regulating the production processes. Progress in each of these branches is linked with using the achievements of modern science.

The rapid rate for the growth in the production of electric power and the reduction in its cost is impossible only on the basis of the present engineering solutions. We must search for qualitatively new engineering solutions. The tendency in the development of modern power production is a sharp rise in the unit capacity of the power equipment and a transition to higher parameters in the working processes. For this, we must use new types of materials, we must develop the theory of material stability under the conditions of high temperatures, mechanical wearing and vibration, we must work out methods for cooling

the parts of steam and gas turbines. We must solve a whole range of questions linked with the creation of super-high-powered transmission for direct and alternating current.

An enormous effect can be expected from introducing new methods of energy transformation. In this direction great work is already being done. On the basis of research carried out on the magnetic hydrodynamic method of turning thermal energy into electric energy, even in the next few years we will create an experimental-industrial setup with a capacity of several tens of thousands of kilowatts. This method in combination with the existing methods for obtaining electric power will make it possible to raise the general coefficient for the effectiveness of thermal power stations from 7-40% to 50-60%.

Of very great significance is the research on and the creation of nuclear power reactors, in particular, reactors working on high-speed neutrons. In the opinion of our physicists, the solution to this problem will provide the extensive use of nuclear energy, and the necessity of using this is even now obvious for a number of the remote regions of our nation.

A high level in the development of science and industry for new materials and new elements is the guarantee for the successful development of any branch. The possibilities of creating new high-quality materials and elements are determined first of all by the achievements in the chemistry and physics of solids. For manufacturing special electric and radio instruments, it is extremely necessary to have diverse types of magnetic materials, in particular, the ferrites, magnetostrictive materials, and ferro-magnetic tapes.

The working out and utilization of semiconductor instruments means a technological revolution in the electronics. Science is achieving constant progress in this area. With the aid of these instruments, and in particular the tunnel diodes, it is possible to create radio engineering systems for super-high frequencies which is particularly important for creating modern high-speed electronic computers. The use of semiconductor crystals makes it possible to basically reduce the volume of the electronic equipment.

The development of molecular electronics has even greater prospects for solving problems concerning the microminiaturization and raising the reliability of complex electronic instruments, in particular, in the electronic mathematical equipment. The development in this area of science is aimed at creating compact instruments which contain in one cubic centimeter hundreds of thousands and millions of elements which comes close to the density in the distribution of neurons in the human brain.

Semiconductors are beginning to play a greater role not only in radio electronics, but also in electrical engineering. While the Committee on Electronic Engineering is directing the development of the radio electronic industry, work in the area of electrical engineering up to now has been scattered.

It is rarely recognized that the abrupt change in radio electronics was caused by semiconductor materials. Obviously, a no less revolutionary change in different areas of technology will be linked with the use of quantum intensifiers and generators of microwaves and light radiation. Even at present, we can see the expediency of using them not only in super-accurate radar and radio navigation, long distance space radio communications with an enormous volume of information, and for super-high-speed accounting equipment, but also as the basis for completely new methods and technological processes in industry. In particular, we already have quantum light generators, the rays of which in thousands of a second "burn through" very delicate openings in material with any hardness such as steel, carborundum and diamond.

Semiconductor technology, quantum electronics and a number of other branches of science and technology require a new level in work on growing crystals. The Academy has created the nation's best ruby crystals which provide the work of the quantum generators, and at a number of plants they have begun to introduce this new equipment. The Academy is giving particular attention to developing this work. However, still a great deal must be done by science in improving the processes of growing crystals. We feel that we must give serious attention to creating an industrial base for producing crystals with different properties.

For solving a number of pressing scientific and technical problems, it is very urgent to have super-conducting materials with a high critical magnetic field and electrical current density. The use of super-conductors opens up new possibilities for creating powerful magnetic fields and this is of primary significance for solving the questions involved in controlled thermonuclear reactions, the magneto-hydrodynamic method of transforming thermal energy into electric energy, for accelerating high-energy particles, and for generating submillimeter waves. The Physics Institute, together with the Metallurgical Institute, have worked out magnets from super-conductors, and we must pay attention to work on their utilization.

It is difficult to overestimate the significance of physics and chemistry in creating highly durable and fire resistant materials for aviation and rocket technology, for electrical machinery construction, atomic equipment, and radio electronics. We must pay attention to new methods of producing the materials. The Academy has worked out and given to

industry an extrusion method for accurately manufacturing parts from nonferrous metals.

The proposals advanced in the report on the development of the chemical industry and its significance for different branches of the national economy confronts science with enormous tasks. The resolutions of the May (1958) Plenum of the Central Committee of the CPSU played an important role in developing chemistry and led to great advances in the work of the USSR Academy of Sciences and the branch chemical institutes. In recent years, we have synthesized a number of new polymer compounds which possess a raised thermal resistance, with improved dielectric characteristics and other important properties, and we have also proposed new methods for obtaining them.

The working out of a majority of the processes in which the chemical industry is directly concerned relies upon research on the theory concerning the structure and reaction ability and on the study of the kinetics and mechanism of chemical reactions. The extensive theoretical aspect of the work has led to the creation of the chemistry of elementary organic compounds. An important result of this research was, for example, the silico-organic polymers. On the basis of them it is possible to make and they are at present making plastic, rubber, lacquers, electrical insulating material and other materials which work a long time at high temperatures. The achievements in the area of polymer materials will more and more change the relationship between the volume of production for metals and polymers.

It must be recognized that scientific research in the area of inorganic chemistry, and particularly that research linked with the task of synthesizing inorganic compounds with a fixed range of properties, and above all with semiconductor properties is being developed insufficiently. Recently, the Academy passed a number of measures for correcting this situation.

The March Plenum of the Party Central Committee stressed the important role of chemistry for increasing agricultural production. In line with this Comrade Keldysh spoke in detail on the important tasks of science in this area.

Then the speaker turned to the tasks of extensively using computer equipment in the sphere of accounting and control.

The Academy of Sciences is taking the necessary measures to carry out the instructions made by Nikita Sergeyeovich Khrushchev in his report at this Plenum for working out, together with the planning organs, the recommendations for improving planning for the production and scientific organization of labor, on the basis of the discussion materials which occurred in the press.

The questions raised in the report on the development of scientific research in the academies and state committees are extremely important. It is extremely important for the development of science and for the development of production to concentrate scientific research, designing and experimental design work in the state committees. The resolutions passed last year on improving the activity of the Academy of Sciences, for transferring a significant number of its institutes to industry and for concentrating the efforts of the Academy on developing theoretical problems of great national economic significance have led to positive results. The Academy of Sciences must concentrate its work on those theoretical problems which have extensive significance for developing a number of branches in the national economy.

Further Comrade Keldysh spoke of the necessity of strengthening the tie between the Academy of Sciences and the state committees.

The proposals advanced and the report of N. S. Khrushchev on improving the leadership and organization of science in the republic academies will aid in raising the effectiveness of research. Taking into consideration that the leadership over the questions concerning scientific-technical policy is concentrated in the state committees, it is possible that it might be expedient to review the question of giving to these committees the narrow-branch scientific institutions of the republic academies and affiliates.

It seems to me that the creation of scientific councils on a number of problems under the Academy of Sciences and the USSR Committee for the Coordination of Scientific-Research Work would lead to an improvement in the coordination of scientific research. However, it was correctly pointed out in the report of N. S. Khrushchev that it is necessary to take measures which will provide for the correct direction of work in all academies. Here the inter-republic councils of the academies, in our opinion, should play a positive role. At the same time, we must end the creation of small weak institutes in the republics and in the USSR Academy of Sciences. It may be that we should unite a number of institutes. It seems to us necessary to work out measures for a further improvement in the work of the academies.

Comrades! The present Plenum of the Central Committee of the CPSU has raised questions linked with fulfilling the grandiose tasks planned by our Party for creating the material-technical basis of communism. Improving the leadership over industry, agriculture and science will be a further step along the path to bringing scientific research maximumly close to practice, and to the demands of the national economy. The close link between science and production is a guarantee for the successful solution to the great tasks of developing the economy of our nation. (Extended applause.)

THE SPEECH OF COMRADE M. A. LAVRENT'YEV

**(Vice-President of the USSR Academy of Sciences
and Chairman of the Siberian Department of the
USSR Academy of Sciences)**

[Following is the translation of a speech given by M. A. Lavrent'yev at the Plenum of the Central Committee of the CPSU, in the Russian-language publication Pravda, 23 November 1962, page 5.]

Five years ago, we created a scientific center in Novosibirsk. Under this center were all of the affiliates and multi-field institutes of the USSR Academy of Sciences which lay to the east of the Urals in Krasnoyarsk, Irkutsk, Yakutsk, Ulan-Ude, Chita, Vladivostok, Magadan, in the Sakhalins and Kamchatka. We determined the composition of the new scientific center, selected the scientific cadres and began to build a scientific city 30 km from Novosibirsk. The Party's summons to the scientists of creating a scientific center in the east of the nation was met with a lively response both among the experienced and among the young scientists.

Today, from this high tribunal, it is particularly pleasant to say that the task of the Party for creating a new scientific center has basically been completed. I, on behalf of the Siberian scientists, would like to express great thanks to the Central Committee of the Party, and to Nikita Sergeevich Khrushchev for daily assistance in all of our needs (applause).

From the very conception, we have attempted to deal with a great range of problems in science, to assist industry and agriculture, and to constantly search for talented youth and to develop it. A part of the institutes held a leading position for certain problems, the Mathematics Institute achieved significant successes in the area of differential equations and their application to mechanics. Methods were worked out which were particularly important for handling problems involving concrete economics. Physicists, in close contact with the physical institutes of Moscow and Leningrad, are working on crucial problems in nuclear physics, and work has begun on the physics of solids. Our

chemists are working out new methods for obtaining super-pure materials, the problem of creating new catalysts, and they are advising the chemical industry. The economics conference which was held recently in Novosibirsk held the work of our Economics Institute in high esteem. The majority of our institutes are giving real assistance to the industrial enterprises.

Of particular significance under the conditions of Siberia and the Far East is the problem of the scientific cadres, particularly in the physics-mathematics section. Even in the universities of Siberia and the Far East, the physics and mathematics chairs, as a rule, are held by docents who are not carrying out active scientific work. Our task is to sharply increase the preparation of these cadres. In order that our efforts may be the most effective, we have undertaken measures to improve the selection of youth for the university.

It has been much more difficult to reform and improve the work of the affiliates and the multi-field institutes, while the most complex has been the problem of the leading scientific cadres. While thousands of scientific workers have come to Novosibirsk from Moscow and Leningrad, and among them hundreds have great experience in scientific and practical work, in the more easterly regions there have been significantly fewer and a total of several score with scientific experience. The lack of mature scientists, the slow construction rates for the institutes and the housing difficulties have created a feeling of dissatisfaction among the workers in a number of our eastern affiliates and institutes. Many complaints are heard at the annual meetings of the Siberian division.

Let us turn to two problems, the solution of which is particularly important for the east of the nation.

The first is the problem of seeking and using the underground thermal waters. The earth has numerous regions where there are hot springs and geysers which give off steam. On our Kurils and in Kamchatka, there are truly unlimited sources of such water. A study of their origin, reserves and the possibilities for operating them have enormous scientific and practical significance. Six years ago we began an expedition of the Academy of Sciences consisting of specialists from different areas such as geologists, mechanical engineers, and physicists for organizing control work in this area. We selected an area 30 km from the largest Kamchatka Fish Combine from the Sea of Okhotsk. At present there is now a young settlement of drillers and workers, we have drilled 22 wells and 12 of them are producing industrial steam. Hotbeds have been built. In 1963, they plan to begin the construction of the first power station. A great deal of scientific material has been obtained. I am sure that the presence of cheap power and fuel will rapidly change the aspect of this rich but very severe area.

And the second problem is to show the mechanism in the work of a volcano, a problem which is also specific for Kamchatka. A study of volcanic activity will make it possible to observe the bowels of the earth, to see into the unlimited subterranean thermal reserves which through the joined efforts of the scientists and the engineers will at one time be placed in the service of people. Along with this more remote task is a very close task which is the problem of predicting eruptions which is of particular importance for volcanos which lie close to inhabited points and cities.

Of great practical interest is the work being carried out in the Far Eastern reservations for seeking new medicinal plants. Serious advances have already been made here.

While I am sharing my impressions of the Far East, I would like to say something of the enormous satisfaction and pride of Soviet man; how much has been done in the past two years in building and equipping cities, and entire new living regions have grown up in Vladivostok, Petropavlovsk-Kamchatskiy, in Yuzhno-Sakhalinsk new movie theaters schools and stores! In Vladivostok in one of the best suburban areas, work is being completed on a unit of buildings and housing for our affiliate.

Comrades! Soviet power has given the people of our nation unprecedented possibilities for development. Particularly great advances have been achieved by our people in the period after the historic 20th Congress. The 22nd Congress of the CPSU has passed a new Party Program, and at present throughout the nation work is going on in realizing the envisaged plan for building communism.

The penetrating report given by Comrade N. S. Khrushchev at the present Plenum shows our remarkable successes and opens up enormous reserves which we possess, and gives a concrete program for improving leadership in developing the economy. We, the Soviet scientists, are proud of our motherland, and we are proud of the fact that our labor is being used for people, and we have obtained all of the possibilities for carrying out the most daring ideas. (Applause)

Nikita Sergeevich Khrushchev, in his report, confronted scientists with the question of whether or not everything is correct in the organization of our science. This remark forces us once again to carefully review all that we have done for carrying out the rapid development of technology and agriculture. The President of the Academy of Sciences, Comrade Keldysh, provided a description of the most important tasks of science. I would like to take up another but just as important problem which confronts all of the institutes of the Academy, which is the problem of training the scientific cadres. Here we have particularly great reserves, but for realizing them all of the scientists must give particular attention to this concern. The training of cadres is a direct

task for the Academy institutes. With the availability of a universal middle education, and with the rapid growth of science, it is particularly important to give some consideration to who will be taught, what will be taught and who will teach.

I will speak about the training of cadres in the physics-mathematical area, but much will concern the other sciences as well. Who is being taught? The selection of specialists for admission to the university and to the Pedagogical Institute of Higher Learning, as a rule, is usually somewhat accidental. In the acceptance, it is difficult to explain whether the entering student actually has a real interest and ability or if he has merely prepared well for the examinations. This creates unequal conditions for the youth from the periphery and from the villages, and for the youth from the large towns where the teaching level is much higher. Due to this we lose a great number of talented youth. It seems to me that we must expand the experience of the Siberian division in selecting capable youth and creating physics-mathematics boarding schools.

What is being taught? Independently of whether or not the student will become a teacher, scientist or industrial worker, the most important thing is that the student enjoy his specialty and that he learns to critically and creatively think in his specialty and use his knowledge in practice. For achieving this purpose, we must sharply reduce the program and the number of lectures, and strengthen independent work.

Who should teach? In each school in the physics-mathematical area, aside from the staff teachers, the stronger students and graduates should also teach. In each university with a physics-mathematics faculty, scientists who are doing scientific work should also be instructing. As much as possible we must use workers on all levels of the scientific institutes from the graduate student to the Academician.

Comrades! In conclusion let me assure the Plenum that we, the scientists, will continue all of our efforts to develop science, to prepare the coming generation and to further bring science close to life. (Extended applause).

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THE SPEECH OF COMRADE V. S. FEDOROV

(Chairman of the State Committee of the USSR Council
of Ministers on Chemistry)

[Following is the translation of a speech given by V. S. Fedorov at the Plenum of the Central Committee of the CPSU, in the Russian-language publication Pravda, 23 November 1962, page 5.]

In the report of N. S. Khrushchev, one can clearly see the leading place of the chemical industry and its role in the fight for technological progress in the development of the nation's economy. In fact, the achievements of modern chemical science and industrial production and the use of synthetic materials in different branches of the national economy convincingly show that chemistry, closely linked with solving the practical tasks of communist construction, provides the most effective and complete utilization of natural wealth in the nation, and sharply reduces the expenditures of human labor in industry, agriculture and most fully satisfies the vital demands of man.

At present, when communism in our nation has become a vital creative force, and a concern of the practical activity among the masses, there is particular importance in the Program passed in 1958 at the May Plenum of the Central Committee for the accelerated development of the chemical industry. This concrete program, worked out by a commission with the extensive participation of a collective of scientists, production innovators, workers from Party and economic organizations under the leadership of Nikita Sergeyevich Khrushchev, in essence lay the beginning for a national struggle for a sharp upsurge in all branches of the chemical industry in our nation. Under the new conditions for managing industry and construction, this has provided positive results.

Overtaking the rate of development for all of industry, the chemical industry after the May Plenum of the Central Committee of the CPSU increased the volume of production by 76%, including the production of synthetic rubber and fiber by 76%, and significantly increased the production and expanded the range of plastics and synthetic resins which are

widely used in electronics, machinery construction, and in the building industry. The production of automobile tires has increased by 6.5 million units, or by 45%, and mineral fertilizer by 4.8 million tons, or 39%.

There has been an extensive development in the construction of new and the reconstruction of operating enterprises. In the period since the May Plenum of the Central Committee of the CPSU, capital investment in chemical industry reached about 3.9 billion rubles, or 77% more than was invested in the 13 years preceding this Plenum. One hundred and fifty new plants and major production sites have been put into operation. New centers of the chemical industry have been created.

Comrade Fedorov gave figures showing that in the present year, the industry will open up new capacity which in general has not been known by our domestic industry in all of the years of its development preceding the May Plenum.

It must be said that in contradistinction to the preceding years, in the development of the domestic chemical industry there is a firm course of extensively using the hydrocarbons of oil and natural gas to make synthetic materials. This is certainly not accidental. The thing is that oil and gas make it possible to obtain with fewer expenditures of money greater masses of different reactive hydrocarbons. This opens up unlimited possibilities for creating highly effective processes in the industrial obtaining of synthetic mass-use materials such as polyethylene, polypropylene, polychlorvinyl, ammonium, acetaldehyde, phenol, synthetic rubber, fibers, detergents and many, many other types of chemical products.

Enormous reserves of cheap oil raw products and the comparatively simple techniques in producing polyethylene, and in addition the valuable physical-chemical properties of it open up wide prospects for a significant development of polyethylene production in our nation, and above all, where there are already reserves of ethylene, particularly in Ufa, Tataria, Salavata, Groznyy and Gur'yev.

A large role in developing polymer material production will be played by completing work on obtaining the new polymers such as polypropylene, polyformaldehyde and polycarbonate. A basically new direction is the creation of a production process for very important types of organic synthesis products using direct one-stage syntheses on the basis of replacing acetaline by ethylene and propylene.

Positive results from the scientific-research, design and experimental work carried out after the May Plenum of the Central Committee show that they have created real methods for changing the production of valuable chemical products to new more accessible and economic types

of raw products, the intensification of production processes and the most effective utilization of capital investments and material-technical resources for the accelerated development of the chemical industry on a high technical level.

However, we still are not completely using the enormous possibilities for better carrying out scientific-research, design and experimental work. Frequently the design organizations of a committee delay giving out the design documentations and this complicates the construction of the enterprises. Serious mistakes occur in the technological solutions and this leads to an increase in the cost of the construction and impedes the enterprise's reaching the design indices, all of which cost the state a great deal.

The State Committee on Chemistry and the collectives of the scientific-research and design institutes and experimental bases are taking measures to remove the existing shortcomings in work. Here a fundamental improvement in the arrangement of scientific research and design work and a further development in the chemical sciences and technological progress will be achieved on the basis of practically carrying out the proposals of the presidium of the Central Committee as put forward in the report of N. S. Khrushchev.

Concentrating the planning of scientific-research, experimental and design work for the branch as a whole and also the financing and material-technical supply of them directly in the branch committee, independently of the departmental subordination of the organizations which are carrying out the work in this branch, will increase the role of the committee in carrying out the technical policy of our Party. Comrade Fedorov spoke further on certain questions involving a rise in the role of the state committees in technological progress.

A sharp upsurge in the production of chemical products and a reduction in capital expenditures for building in the chemical industry will be achieved on the basis of creating large-tonnage specialized production sites. For this, we must now steadfastly increase the work in the area of creating an organizing serial production of highly productive equipment, powerful complete-line units and production lines, and also modern methods of automation and remote control. At the same time, this demand which is a product of the concern for technological progress in chemistry, is not met in machinery construction. In the last three years alone, the machinery construction builders have delayed working out more than 200 models of new types of equipment and instruments.

Regardless of the fact that in the last years in our nation a solid basis has been created for a major upsurge in the industrial production for the chemical industry, the resolutions of the May (1958) Plenum of the Central Committee, the directives of the 21st Party Congress and the

decrees of the Central Committee of the CPSU and the USSR Council of Ministers on Developing the Chemical Industry are not being carried out satisfactorily. Things are particularly poor in carrying out the plan for capital work and opening up new capacities. Over the last four years of the Seven-Year Plan, 378 million rubles worth of capital investment have not been realized. Due to construction delays in the enterprises of the chemical industry in the Tatarskiy, Bashkirskiy, Zapadno-Kazakhstanskiy, Luganskiy, Tul'skiy, Sverdlovskiy, Azerbaydzhanskiy, Altayskiy, and certain other sovnrarkhozes, they have not fulfilled the plans for opening up new capacity which produces plastic and chemical fiber.

One of the main reasons for not fulfilling the plans for capital construction and opening up new capacity is the chronic lack of coordination between the capital construction plans and the material-technical supply for the chemical industry construction sites both in terms of volume and in terms of the delivery times. Thus, from the annual plans, the delivery of domestic equipment against the plan of capital construction and opening up new capacity had a basic gap and was met in 1960 by 78%, in 1961 by 82%, but for the 1962 plan by 68%.

In the proposals of the Central Committee Presidium as put forward in the report of N. S. Khrushchev, one finds with perfect clarity the paths for a further improvement of Party leadership in the area of developing the economy of our nation. Relying upon these resolutions, in a short period of time we will be able not only to liquidate the existing lag in opening up new production capacity, but also to decisively raise the production of chemical products. (Applause).

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THE SPEECH OF COMRADE V. YE. BOYKO

(Chairman of the State Committee of the USSR Council
of Ministers on Ferrous and Nonferrous Metallurgy)

[Following is the translation of a speech given by V. Ye. Boyko at the Plenum of the Central Committee of the CPSU, in the Russian-language publication Pravda, 24 November 1962, page 4.]

The report of N. S. Khrushchev once again shows how the Central Committee of the Communist Party of the Soviet Union is approaching in a creative and Leninist manner the solving of questions concerning the further improvement in Party leadership over the national economy. There can be no doubt that the proposals given in the report will find support from the entire Party and all of the people.

The metallurgical industry of the Soviet Union is developing successfully, and in the four years of the Seven-Year Plan will produce a significant amount of ferrous and nonferrous metals above the control figures.

In the report of Comrade Khrushchev, he has clearly defined the problems which confront the committees for the industrial branches. At present, in the ferrous and nonferrous metallurgical industry, 95 design and scientific-research institutes are employed in scientific-research and design work. The State Committee for Ferrous and Nonferrous Metallurgy has been given 43 institutes with a total number of workers of about 45 000 persons.

In order to more rapidly liquidate the existing shortcomings and the dispersion in design and scientific-research work which Comrade N. S. Khrushchev spoke of, we must give the committee all of the scientific-research and design institutes which are employed in metallurgy, with the exception of those institutes which have a purely local purpose.

The question of the correct organization for the work of the scientific-research and design institutes is particularly important. It must be noted that at present in certain instances the work of advanced enterprises in the metallurgical industry is overtaking the theoretical ideas. At present a number of institutes are doing parallel and partial work on

the solution of the same problems. For example, 44 institutes are concerned with the questions involving the use and reprocessing of slake.

The committee plans to create a number of multi-field institutes which, along with scientific research, will work out design solutions. In our opinion, this will make it possible to more effectively and rapidly introduce into production new processes and designs. The committees must be given greater rights on the questions of planning and introducing scientific work so that the Committee for Coordinating Scientific-Research Work would solve only those questions of an inter-branch character.

For accelerating the introduction of new production processes and units, it is important to correctly solve the question concerning the scientific-research and experimental bases. These bases, in our opinion, must be built in remote regions of the nation which have a specific character in line with the different raw material and other conditions. But along with the creation of new bases which requires time, it would be reasonable to use as bases for certain areas of metallurgical production some advanced metallurgical plants as the Magnitogorskiy, Kuznetskiy, Noril'skiy, "Zaporozhstal", and Cherepovetskiy.

The metallurgical industry has major production reserves. The main and decisive direction should be to reconstruct and expand the presently operating and to complete the construction of already begun metallurgical enterprises which will make it possible to obtain more metal in a shorter period of time with fewer expenditures.

The experience accumulated in recent years for intensifying the processes in ferrous and nonferrous metallurgy shows that the main methods for a further acceleration of all metallurgical processes and for raising the productivity of the metallurgical units is to use natural gas and oxygen. Experimental work and computations convincingly show that by using a blast enriched with oxygen together with natural gas in the blast furnaces, it is possible to raise the productivity of the furnaces by 15-20%, to save up to 30-35% of coke, to reduce capital expenditures for producing pig iron by 10-20%, and to reduce the cost of pig iron by approximately 10%.

In nonferrous metallurgy, blast enriching with oxygen makes it possible to increase the productivity of the shaft furnaces for copper pouring by 50-60%, lead pouring by 60-70%, nickel pouring and slake-subliming furnaces by 80-100%. However, oxygen both in ferrous and nonferrous metallurgy is used still on an insufficient scale.

The Party and the government have set a new direction in increasing the capacity of the steel casting production. Completely new steel casting shops will be built on the basis of the oxygen-converter processes. By the end of 1965, we should have the capacity to produce by this

progressive method about 20 million tons of steel. The attention of the Party and economic organizations in Sverdlovskaya, Donetskaya, Chelyabinskaya and Dnepropetrovskaya oblasts and the State Committee on Metallurgy at present must be concentrated on the practical realization of this problem.

A fundamentally new and progressive direction in developing metallurgy is the use of the constant pouring of steel and nonferrous metals. This method which has been worked out and successfully used at several metallurgical plants of the Soviet Union, is characterized by high technical-economic indices in comparison with the presently used methods for pouring steel into ingots.

The constant pouring of steel directly into blanks for section or sheet mills makes it possible to end the construction of blooming and slab mills, and casting shops at the new metallurgical plants.

A very important question in developing ferrous metallurgy which to a great degree determines the economicness and effectiveness of work for all of the consumed metal in the branches of the national economy is the correct relationship between individual types of metal production. The basic progressive tendency in the last years in this question has been to reduce systematically the amount of casting in the total output of ferrous metals and the constant growth in the proportional amount of sheet in total production of rolled iron. This creates the objective preconditions for converting machinery construction more and more from casting to rolled sheet and to manufacturing light and economical machinery. However, one still encounters the practice of the unjustifiably extensive use of pig and steel casting. We must decisively change this and move to manufacturing equipment from sheet metal and plastic.

Metallurgy at present must make a new advance in raising the quality of the product produced. There is such a possibility. The questions for raising the quality of metal must be reflected in the plans.

We feel that the theses put forward in the report of N. S. Khrushchev are correct on making construction an independent branch of the national economy. This question must now be taken up. In the metallurgical industry many good shops and units have been built. But in a number of instances, the metallurgical enterprises are being built extremely slowly.

Soviet metallurgical workers under the leadership of the Leninist Central Committee of the Party will carry out the technology and production processes for metals and will make their worthy contribution to creating the material and technical basis of communism. (Applause).

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