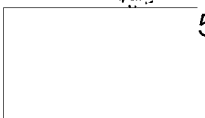


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ALL-UNION CONFERENCE OF DIRECTORS OF CONSTRUCTION AND INSTALLATION ORGANIZATIONS OF THE USSR MINISTRY OF ELECTRIC POWER PLANTS

The All-Union Conference of Directors of Construction and Installation Organizations, convoked by the Ministry of Electric Power Plants, met on 1 - 3 December 1948 at the Engineer's and Technician's Club imeni Dzerzhinskiy at Moscow.

D. G. Zhimerin, Minister of Electric Power Plants USSR, opened the conference and directed the proceedings. The conference was attended by construction chiefs of steam-power plants, hydroelectric power plants, electric power networks, construction chiefs for peat enterprises, managers of construction trusts and power systems, leading workers of the main administrations, and heads of departments of the Ministry of Electric Power Plants -- more than 400 in all.

The following persons participated in the conference: A. S. Pavlenko, Vice-Chairman of the Bureau for Fuel and Transport of the Council of Ministers USSR; I. M. Klochkov, Vice-Chairman of the State Planning Committee; A. I. Drobyshev, I. I. Dmitriyev, M. S. Smirnov, and A. F. Bausin, Deputy Ministers of Electric Power Plants USSR; D. V. Yefremov, Deputy Minister of the Electrical Industry USSR; I. L. Mitrakov, Deputy Minister of the Building Materials Industry; A. G. Zhukov from the Moscow Committee of the VKP(b) (All-Union Communist Party); V. V. Vinshnyakov from the Moscow State Committee of VKP(b); A. S. Foduslkin, Chairman of the Central Committee of the Trade Union of Electric Power Plant Workers; V. P. Varlamov, Chairman of the Central Committee of the Trade Union of Peat Industry Workers; S. A. Spirin and I. T. Novikov, members of the Board of the Ministry of Electric Power Plants; Academician A. V. Vinter, Vice-Chairman of the Technical Council of the Ministry of Electric Power Plants, and others.

The conference was convoked to consider the results of capital investment in building power plants, electric networks, and peat enterprises in 1948 and measures for promoting construction of such enterprises in 1949. D. G. Zhimerin, Minister of Electric Power Plants USSR, gave a report on this subject. He called attention to the great work accomplished by Soviet power engineers for the rehabilitation and development of power economy under the postwar Five-Year Plan. The installed capacity of power plants at the end of 1948 was 25 percent greater than before the war, while the production of electric power was 32 percent greater. Even in 1946 the Soviet Union was the second greatest producer of electric power in the world, surpassing England, France, and many other countries.

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The Minister went on to say that the construction of new plants and rehabilitation of regional plants wrecked during the Great Patriotic War had been carried on and placed on a new technical footing by utilizing high-pressure steam, by extensive automatization of installations, etc.

The introduction of the latest engineering techniques and realization of a number of important reconstruction measures in restoring the wrecked plants has had a favorable effect on technical and economic factors, has released personnel, and eliminated the gap between turbine and boiler power, he said.

Zhimerin then pointed out that, on the whole, according to the Ministry of Electric Power Plants, the power of regional plants in areas which had been occupied during the war had recovered 85 percent of the prewar level -- in many cases 100 percent. However, he said, compared with other branches of the national economy, the development of power engineering could not be called outstanding. There has been a lag in new installed capacity. As a result, deficits in the Urals, the Central Industrial Region, and in Khar'kov had not been made up, he stated.

In 1948, the Minister continued, considerable progress had been made in the construction program and better results had been obtained than in the whole post-war and prewar period. During 10 months of 1948, 98 percent of the investment capital was utilized and 94.3 percent of the construction and installation work was accomplished, he said. Nevertheless, the lag in constructing electric plants, networks, and peat enterprises was not eliminated, he stated.

The Minister severely criticized the work of the construction organizations under the various main administrations, namely Glavenergostroy (Main Administration for Power Plant Construction), Glavelektroset'stroy (Main Administration for Electric Power Network Construction), Uralenergostroy (Ural Power Plant Construction Trust), and the Yaroslav and Gor'kiy trusts for the construction of peat enterprises; the construction trusts of the Nizhne-Turinsk GRES (State Regional Power Plant), the Southern Kuzbass GRES, the Smolevich Trust, the Nesvetay GRES, and others.

The lag on these and other construction organizations, the Minister said, was intolerable inasmuch as they had on hand all the necessary equipment and materials.

Zhimerin stated that one of the chief causes of this unsatisfactory state of affairs was that the directors of these construction works underestimated the importance of mechanization and proper organization of work.

The Minister cited many instances proving that Glavenergostroy, Glavelektroset'stroy, Mosenergostroy (Moscow Power Plant Construction Trust) and Uralenergostroy had increased their motor fleets 2.8 times and their excavators 2.74 times in 1948; instead of the 12 cranes they had in 1940, they now possessed 75, together with a large supply of construction machinery. Glavgidroenergostroy (Main Administration for Hydroelectric Power Plant Construction) also had several times as many motor vehicles in its fleet as well as tractors and excavators, he continued.

The construction organizations of the Ministry of Electric Power Plants, Zhimerin said, were also well equipped with automobiles, tractors, excavators, cranes, locomotives, dumpcarts, compressors, etc. Nevertheless, the use of this equipment was unsatisfactory and the existing standards for utilizing it were too low, Zhimerin stated.

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The Minister continued as follows:

There was even a serious lag in mechanization of construction by new construction organizations: the Gor'kiy GES (Hydroelectric Power Plant; manager, Yurinov), and the Kama GES (manager, Sarkisov). Unless this situation were corrected, it would not be possible to implement the still more important construction program for electric power plants, networks, and peat enterprises in 1949.

Zhimerin went on to describe the program for 1949:

Investment funds were expected to be 40 percent greater than in 1948, the volume of construction and installation work 36 percent larger. A 46-percent increase was planned for the number of new boiler installations, and a 13-percent increase in superhigh-voltage transmission lines. For peat enterprises, the plan called for opening up new fields for seasonal peat extraction amounting to 1,140,000 tons (13-percent increase). Residential areas were to be increased 51 percent by the addition of 315,000 square meters.

The Minister stated that special stress was laid on increasing the capacity of the Moscow, Ural, Southern, and Leningrad power systems. A larger amount of capital for investment, he continued, would be made available to important construction agencies, among others, the Sichekin Electric Power Plant, Nizhne-Turin GRES, Leningrad GES No 2, Southern Ural GRES, Southern Kuzbass GRES, and the Kama, Irtysh, and Upper Siberian hydrostations, and others.

Zhimerin emphasized the necessity of starting work in the very first days of 1949, the need for productive work during the winter, and the urgency of making available to all construction agencies of the Ministry of Electric Power Plants a sum for investment during the first 3 months of 1949 at least 7.5 percent greater than in the last 3 months of 1948.

The speaker then commented on the great importance of supplying building material, providing well developed plans for the utilization of equipment by trained workmen, preparing building plans and estimates, and eliminating turnover in personnel.

The Minister went on to say that for complete fulfilment of the 1949 plan, it would be necessary for the Ministry of Electric Power Plants and its main administrations to take over control of the chief construction programs and provide daily assistance to them.

"The construction and installation organizations of the Ministry of Electric Power Plants," said Minister Zhimerin, "passed through a hard, but glorious period during the war years. The staffs of construction and installation experts are composed of devoted people who have mastered engineering techniques and who were brought up on organizational work. Hence, there is reason to assume that the important task laid on them by the Party and government -- the task of ensuring the introduction of new installed capacity at power plants, networks, and peat enterprises and guaranteeing an outstanding development in power engineering -- will be honorably executed."

The report was discussed by 45 participants in the conference, including the following: Rogovin, Construction Chief of the Stalinogorsk GRES; Tarasov, Director of Sevensnergostroy (Northern Power Plant Construction Trust); Pozharov, Director of the Chirchik Construction Trust; Krivonishchenko, Construction Chief of the Nizhne-Turinsk GRES; Semichastniy, Director of Donbassenergostroy; Naymushin, Construction Chief of the Niva GES; Yudin, Construction Chief of the Southern Ural GRES.

Also, Chernyak, Director of Lentorfostroy (Leningrad Peat Enterprise Construction Trust); Kalizhnyuk, Manager of the Sochi GES Construction Trust; Tenditnikov, Director of Sibenergostroy (Siberian Power Plant Construction Trust); Sarkisov, Construction Chief of the Kama River GES; Polyakovskiy, Director of the Uralenergostroy Trust; Dolina, Director of Donbassenergo (Donbass Power System).

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Also Grobokopatel', Chief Engineer of Mosenergostroy; Yurinov, Construction Chief of the Gor'kiy GES; Marinov, Director of Sverblovenergo (Sverdlovsk Power System); Kruglyakov, Construction Chief of the Frunze TETs (Heat and Power Plant); Gurvich, Chief Engineer of TEP (State Trust for Steam-Electric Power Planning); Nosov, Manager of Glavgidroenergostroy; Straupe, Director of Lenenergo (Leningrad Power System); Kreysberg, Manager of the Worker Cadres, Labor and Wages Section of the Ministry of Electric Power Plants; Podushkin, Chairman of the Central Committee of the Trade Union of Power Plant Workers; Basilenko, Chief Engineer of GIDEP (State Installation for Hydroelectric Power Plant Planning); Bondarev, Manager of Glavenergostroy; and Chankotadze, Director of the Khrum GES Construction Trust.

Participants in these discussions pointed out many defects in the organization and progress of construction for electric power plants, networks, and peat enterprises, as well as in planning and financing the undertakings. They noted the lack of proper utilization of machinery and equipment and the need for timely supplies of wood and other building materials.

They also criticized the planning organizations, especially TEP (Teploelek-troproyekt, State Trust for Steam-Electric Power Planning), which had not yet re-organized sufficiently to furnish supplies on time so that construction might be speeded up and the work organized in accordance with the concrete conditions of each area.

Many instances were cited of unsatisfactory work on the part of the main administrations and departments of the Ministry of Electric Power Plants in managing and assisting in the construction mentioned above.

Podushkin, Chairman of the Central Committee of the Trade Union of Power Plant Workers, spoke on the development of socialist competition between construction collectives to ensure execution of the 1949 plan, improve the cultural and living conditions of workers, and ensure proper working conditions for them.

The participants of the conference enthusiastically approved a letter to Stalin promising that construction and installation workers would complete the 1949 plan for the construction of electric power plants, networks, and peat enterprises.

In closing the conference, Zhimerin said that the conference had demonstrated the great solidarity of the construction and installation collectives and their desire to complete the 1949 plan.

On display in the Engineer's and Technician's Club imeni Dzerzhinskiy were exhibitions of the achievements of the construction and installation organizations and plants of the Ministry of Electric Power Plants. Demonstrations were given of articles, instruments, new devices, and actual models of machinery for construction-installation work.

A large number of exhibits showed new methods of organizing construction and installation and important achievements in the field of power plant construction.

REPORT TO THE CONFERENCE BY A. M. DROBYSHEV,
DEPUTY MINISTER OF ELECTRIC POWER PLANTS

The year 1948 was marked by improvement in the work of our construction and installation organizations. This year we shall establish a new record for installed capacity. First of all, the plan for installing turbine power will be fulfilled. Obviously, when we reach the end of the year we shall have completed

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the plan for construction and installation work and for investment of funds. Our workmen and engineers have mastered the complex technology of setting up and operating boilers and turbines for high-pressure steam.

In 1948, Mosenergostroy completed its program of organization and outfitting. The construction sections of this trust have been enlarged and are now able to solve all problems laid before them.

By the end of June 1948, our Ural building was proceeding more rapidly, although, admittedly, not rapidly enough. But, in spite of great shortcomings, Glavenergostroy activities completed 30 percent more construction and installation work in 1948 than in 1947.

These results, however, are not sufficient to meet the problems before us in 1949. I should like to spend a few moments on certain daily problems in our construction work which have not received due attention.

As far as the problem of organizing the construction and installation work is concerned, everyone stresses the importance and imperative necessity of preparing working plans in good time. A recent check-up showed that Glavenergostroy had prepared plans for only ten out of 25 of its construction projects; that Mosenergostroy had plans for two out of six projects while a third (Shchekin GRES) was in preparation. Not even one of the projects of Uralenergostroy had a finished working plan.

Many people, unfortunately, believe that it is a good thing to prepare working and technical plans for organizing work but that it is not necessary to work according to these plans. Consequently, we find frequent instances where the working plans are made for their own sake, but work is carried out without reference to them.

Take, as an example, the construction work of the Aleksin TETs (Heat and Power Station) of Mosenergostroy. Here, to carry on work during the winter, the plan called for construction of bridges to maintain operation of the railroad which brought in equipment for assembling boilers and turbines. Apparently, the plans indicated this necessity very clearly. Nevertheless, an excavator was brought in, trenches 8 to 10 meters wide were dug, the tracks torn up, and boiler installations suspended. And this situation lasted several weeks. Evidently, the directors of this trust knew about this situation and agreed to it. Only after the Minister's intervention was this shocking departure from the working plan abandoned.

At least 1½ months of the 3-month delay in installing the boilers in the Aleksin TETs was due to this departure from the working plans.

The construction work of the Southern Kuzbass GRES is another case in point. A collective of 1,100 workers spent all last winter clearing away snow and delivering fuel and supplies. It is evident from the account books that the construction and installation work of this collective for the first 3 months of 1948 amounted to a total of 443,000 rubles. In other words, the customer paid for clearing away snow under the item "Winter Work." Here again, because of a lack of an elementary construction plan, 2 million rubles were spent on temporary buildings which must now be demolished. The main guilt for this lack of plans must be ascribed to construction chief, Ivanov and the directors of the Sibenergostroy Trust.

It is, as everyone knows, only through plans for organizing work that we can introduce mechanization and modern methods in construction and installation. Various experiments along these lines have been made by the Shchekin GRES and the

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Stalinogorsk GRES. But this seems to have exhausted our experiments in introducing assembly-line (conveyor) methods in spite of their favorable effect on the work and the resulting economy of labor. Even superficial experiments proved that they increased the productivity of labor more than 30 percent and reduced the net cost 13 to 20 percent.

We have extraordinary conditions for the installation of assembly lines in assembling boiler units. In some projects the initial installation calls for eight boiler units and five or six turbines, which provides a good reason for using assembly-line methods. The Nesvetay GRES, for instance, has eight boilers and four turbines.

Ponomarev, chief engineer of the Nesvetay Plant, and Ivanishchenko and Fedoseyev, directors of Tsentroenergmontazh (Central Power Installation Trust), have talked a great deal about assembly-line methods but have accomplished nothing. In their own practical work, they even managed matters so that it was impossible to install an assembly line for 6 months. They could not find a better place for the steam boilers intended for station heating than in the pulverizer space between the third and fourth boilers. This meant that no preparation could be made for the conveyor belt until spring.

Let us give another example. We had had some experience in the Berezov Plant in commercial production of prefabricated houses. This experience was important both because the parts of the houses were prefabricated in the factory and because the conditions necessary for installing assembly-line methods were present.

But what really happened? It is true that we of the Ministry erred in judgment: instead of turning over the production of the Berezov Plant to one or two areas, we divided it up among too many separate organizations. Consequently, it was impossible to utilize assembly-line methods in these organizations and the majority of the houses have not yet been erected. These organization problems must be worked out both at the Ministry and on the spot by paying greater attention to the practical organization of work. The Construction and Installation Section attached to the Technical Department of the Ministry must be enlarged immediately and made the headquarters for the technical aspects of construction and installation.

On the practical side, daily inspection should be instituted to ensure preparation and use of working plans.

Let us now turn to the so-called "intraproject" planning.

Construction and installation are, obviously, very complicated undertakings with constant, even daily, changes in volume and objective of work. To produce a well-organized Soviet enterprise, the organization of the site itself and of the operations thereon must receive more attention than most localities give them.

Recently the Ministry, the Central Committee of Trade Unions, and the editors of Trud sponsored a Stakhanovite Tuesday on a report of Kruglyakov, construction chief of the Frunze TETs. This project had received the transferable Red Banner of the Council of Ministers for its output in the third quarter of 1948. Yet only the year before -- from the first moment of its existence -- it had always been considered an inefficient one. Kruglyakov stated that since the end of the past year, the engineers and technical experts had concentrated on plans for organizing work and, on the basis of these plans, had re-examined and revised all the technical documentation for work in 1948. During construction they had made daily work graphs expressed in physical volumes for sections, superintendents, foremen, and brigades. There were graphs for all the main types of work. During construction,

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accounts were kept of consumption of materials, wages, and supplementary shop services by sections, superintendents, and brigades. This intraproject accounting and planning permitted the construction managers to regulate the progress of the work day by day, and the results of this organization were soon apparent.

Meanwhile, in another project of the Moscow System, the Stalin TETs, no working plans or accounts whatever were instituted. The result was that only 50 percent of the project was completed in 10 months and approximately 50 kopeks were wasted out of every ruble spent for construction and installation.

The next problem, the importance of finishing the preliminary work in good time, chiefly concerns putting the initially installed capacity into operation. This requires a great deal of equipment, material, and workers, and considerable technical documentation must be prepared. But this preliminary work is not being done on time. Gurvich (Chief Engineer of TEP) has vainly attempted to show that the situation with regard to technical documentation is satisfactory. This is not so.

Here we must establish the order of procedure as soon as possible. This depends not alone on the Central Power Installation Trust, but, to a great extent, on our customer organizations, starting with the main administrations and finishing with the rayon administrations. The order established must be such that the working plans for every piece of work, for every object, especially for the initially installed capacity, will be on the premises at least 6 months before work is begun. If this is not done, it is pointless to talk about completing work on time.

Qualitative estimates must be made in good time for the preliminary work on the new structures. These estimates must state the minimum requirements for temporary living quarters, basic provisional productive installations, railroads and highways, water supply, and sewers.

Of special importance for readying the initial installed units by the allocated target date is the timely delivery of the essential equipment. Difficulties in this respect are not caused by equipment shortage but rather by poor planning.

As a rule, about a month or two before starting up the boilers and turbines, supplementary specifications and requirements not included in previous estimates begin to arrive. For many boilers and turbines to be put in operation in 1949 there are still no specifications for the requisite amount of accessories, pipe, and, in particular, for control and measuring instruments.

Obviously, our organizational personnel, from the director of a station to the main administration, does not understand that the problem of outfitting should be taken up at least 10-12 months, not 1-2 months, before the scheduled starting date.

The magnificent plans for 1949 are extremely complex. Their execution will demand an immediate improvement in the organization of production in all construction and installation work and in material and technical supplies and, above all, in the Bolshevik spirit in all projects. There can be no doubt that construction and installation collectives will take these tasks seriously and honorably discharge their duty to their native land.

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REPORT TO THE CONFERENCE BY N. M. ROGOVIN,
CONSTRUCTION CHIEF, STALINOGORSK GRES

Before the Stalinogorsk GRES was erected in 1948, two main tasks were set before us: to complete installation of the basic capacity and to ensure the reliable and continuous operation of power plants at full power. The solution of these problems inevitably required the elimination of the disproportion between the development of basic and auxiliary sections and the creation of necessary reserves.

Execution of these tasks resulted in the fulfilment of the year's plan for construction and installation work by 15 October 1948. The actual production per workman amounted to 116 percent of planned production. Construction up to 1 November 1948 amounted to an excess of 280,000 rubles over the estimated sum.

In 1948, the two last boiler units and the second high-pressure turbogenerator with a power of 100,000 kilowatts were put in operation. This completed the restoration of the Stalinogorsk GRES imeni Stalin and made it the greatest power plant in the Soviet Union and Europe.

In addition, much was accomplished in extending all the auxiliary sections of the GRES. All prerequisite conditions for continuous service at the fall and winter 1948-49 peak loads were likewise fulfilled.

Several problems of general interest in erecting other construction for the Ministry of Electric Power Plants arose during our experience in building the Stalinogorsk GRES. The Stalinogorsk GRES was one of the first power plants in the USSR to use high-pressure steam on a large scale. It is quite evident that the construction collective of this plant has completely mastered the technology of assembling high-pressure equipment. They are fully supplied with instructions and tools, and the trained crews of engineers and technical experts, brigades, and qualified workmen have become thoroughly familiar with the necessary operations. Consequently, no allowances on the score of familiarity with the work need be made. High-pressure installations and, in particular, large boilers and turbines, can and must be set up in approximately the same time as medium-pressure installations.

However, there are still many instances of poor working methods on these projects. These methods must be eliminated in order to reduce the time and cost of assembling high-pressure installations. The first step is mass production of high-quality electrodes and welding rods without which satisfactory welding of high-pressure units cannot be realized. Furthermore, the plants of the Ministry of Electric Power Plants must institute large-scale production of packing materials (gaskets, etc.). Mechanical and chemical tests must be made on metal specimens. For this purpose, each large assembly point should have field laboratories. To improve the quality of welding, adjustments must be made in production; automatic devices should be introduced for regulating welding and controlling the heat treatment of welded joints.

A unique arrangement of equipment manufactured in our plants has been set up in the Stalinogorsk GRES. It has been in operation for an adequate period to be judged on its performance. Both the German Shikhau Zwickau boilers and the Soviet boiler made by the Taganrog Boiler Plant are operating side by side in the boiler room of this GRES. The performance of the Shikhau boilers with a capacity of 220 tons per hour was unsatisfactory and a maximum output of only 160 tons per hour could be attained. They were reconstructed before installation in the GRES and are now furnishing the expected power.

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On the other hand, the Taganrog Plant Soviet boiler went into continuous operation with a boiler capacity of 230 tons per hour the first month it was installed. This boiler is more reliable, manageable, and economical than the German boiler, proving our superiority to the Germans in boiler technology.

High-pressure turbines with a capacity of 100,000 kilowatts, manufactured by IMZ (Leningrad Metallurgical Plant imeni Stalin) are in operation in the Stalingorsk GRES. Tests carried out by the Government Committee for Acceptance Tests on High-Pressure Equipment proved that the specific heat consumption by these units was approximately 15 percent lower than that of medium-pressure turbine installations. Moreover, there are installed in the station unique hydrogen-cooled generators with a demonstrated efficiency of 98.7 percent -- an outstanding achievement of Soviet factories.

However, we must not close our eyes to the defects in equipment tolerated by the manufacturing plants. One of these shortcomings lies in poor technological methods of resistance welding. This is the cause of serious breakdowns and flaws in alloy-steel castings for high-pressure fittings and turbine housings. In the second 100,000-kilowatt generator, none of the matching parts fitted and alterations had to be made on the spot.

Our factories do not feel responsible for the operation of the machines they manufacture. For example, defects in high-pressure preheaters make it impossible to place them in operation. This caused an excess consumption of over 2,000 tons of standard fuel per month and reduced the load of each turbine 20,000 kilowatts. Defective accessories manufactured by the Venyukov Plant also produced stoppages of the machines.

Recommendations should be made to factories as well as to the Ministry of Electric Power Plants on organizing a system of control over the operation of their products and to eliminate any apparent defects immediately. We have a unique installation in the Stalingorsk GRES and, together with the factories, should bend every effort toward making it the best in the world.

Another common practice that should be avoided is that of converting our installation premises into assembly shops. Boiler units must be delivered assembled at the factory. In this connection, experience at Stalingorsk GRES shows the advantage of combination construction and installation work as the basis for rapidly placing the units into operation. This was carried out successfully for one large boiler unit in our plant. During the construction of the boiler room, the technique of using rigid-frame fittings of a reinforced-concrete design was applied for the first time in actual power-plant construction, which made it possible to avoid putting up the usual supporting timbers.

Construction was carried on simultaneously with the installation of technological equipment. This new industrial method permits finishing the whole job from the foundation to the actual operation of the boiler units in 7 months.

In 1949, one of the new power plants must be built with the rigid-frame method of construction, which should yield much more effective results than in the Stalingorsk GRES, where it was used for the first time.

Accelerated methods were also used by this station for housing, which plays an important role in all construction projects without exception. It is advisable to spend part of the money intended for recruitment on improving cultural and living conditions of workers, thereby preventing turnover of labor.

By 15 October 1948, the Stalingorsk plant had fulfilled its planned quota of housing for the year by 18 percent. Assembly-line methods were used, as well as narrowly specialized brigades. Building was done in block units, including both subsurface and surface construction. Residential construction was adjusted in

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relation to material supplies for industrial construction. Permanent working crews were assigned to housing and transfer to other types of construction was forbidden. All mass operations were mechanized.

All these measures are feasible for other construction projects of the Ministry of Electric Power Plants. In 1949, construction workers of the Stalinogorsk GRES must complete all the necessary work to make this plant a model station of the USSR. It will execute this task with honor.

REPORT TO THE CONFERENCE BY S. B. GROBOKOPATEL',
CHIEF ENGINEER, MOSENERGOSTROY

In 1948, Mosenergostroy made some improvement in its work. It fulfilled 98 percent of its quota in 10 months; the second and third quarters of the plan were completed on schedule, while the plan for October was exceeded by 18 percent. Some of the trust's organizations more than fulfilled the year's plan; namely, the construction sections of the Stalinogorsk GRES and the Frunze TETs, the collectives of Mosenergomontazh (Moscow Power Installation Trust), and Mosteploset'stroy (Moscow Heating Network Construction Trust).

The year's plan for installed turbine capacity was also completed. In the Stalinogorsk GRES and the Aleksin TETs, high-pressure turbines were installed and put in operation. Two of four boilers were installed and put in operation in the former and one boiler in the latter plant.

The output per construction-installation worker amounted to 70.24 rubles -- 107 percent of the planned sum and 124 percent of the planned productivity. However, all building operations of the trust were not equally satisfactory. The Aleksin TETs project succeeded in finishing the first stage of the high-pressure aggregate, but it completed only 83 percent of its plan for 10 months and only 50 percent of the construction of the Stalin TETs.

The trust was unable to organize its work smoothly, although it received great material and technical aid in solving organizational problems. The staff and experts of the trust have introduced and are still originating measures which should greatly improve construction methods.

In various projects of Mosenergostroy general construction plans were worked out, taking into consideration the special features of each building site. This improved the situation in regard to warehouse storage and facilitated continuous flow of supplies. It also made possible the division of preparatory construction and installation work into specific categories. The result was a great economy in labor and material.

At the same time, the trust considered problems arising in organizing branch manufacturing shops to supply the technological construction and installation activities. For, example, in building the Shchekin GRES, a concrete plant was placed in operation with bunker storerooms for cement and scraped pits for inert materials, and with gravimetric measuring of the amount of cement. Thus the inert and active materials were transformed into concrete without being touched by workmen's hands.

The trust paid special attention to the location of branch shops for the general construction plan, placing them, as a rule, outside the permanent station enclosure. As a result, the site was cleared of unprocessed material, the flow of materials to the site was correspondingly decreased, and, on the whole only semifabricated products were shipped in, which made it possible to industrialize

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the whole process. Outside the permanent enclosure of the Shchekin GRES, a construction base was established comprising shops for making reinforced-concrete products, cinder blocks, carpentry products, and others. On completion of the project, or in event of a reduction in demand for a particular product needed in the Shchekin GRES, this base could deliver intermediate goods and construction material to other buildings of the trust.

The next necessary condition for rational organization of construction and installation work is the preparation of objective plans for this work. Technological charts should be made for each section of the work, showing the methods to be used in various processes, their sequence, necessary equipment and instruments, manhours according to class of labor, and materials used.

The trust paid special attention to mechanization of labor processes. The consensus of opinion among builders is that excavation work is the most difficult from the viewpoint of completing working quotas for a single laborer. With a high degree of mechanization, such an opinion is erroneous, as was obvious from the example of the Shchekin GRES where 350,000 cubic meters of excavation work was done by 93 percent mechanization (hydromechanization) of the work, and the average productivity per building amounted to 65 rubles.

Practical use of hydromechanization in building steam-electric power plants according to the experience of the Stalinogorsk and Shchekin GRES, shows that this method can and must be used in our construction work, since it is the most efficient method from the standpoint of net cost, manufacture, and productivity. Very heavy machinery need not be used. For hydromechanization of excavation work, we recommend the 8NZ dredge pumps, now being manufactured by our industries, which are being supplied to the trust in sufficient numbers.

To fulfill the great program for 1949, the trust is greatly enlarging its production shops which supply the demand for stone, sand, material for walls, gypsum, and alabaster products for mechanization of the finishing work. Present plans call for placing in operation four quarries for inert material, two reinforced-concrete plants, two slag plants, one plant for gypsum and alabaster products, and a number of others. The Stalinogorsk Boiler and Mechanical Plant and the Perlov Mechanical Plant are being enlarged to ensure supplies for the trust's construction projects. The Shchekin GRES is in process of being equipped with a group of boiler and mechanical shops which should be completed by June 1949.

Construction workers and trust officials feel confident that they will complete the state plan for 1949.

REPORT TO THE CONFERENCE BY F. D. IVANISHCHENKO,
DIRECTOR, TSENTRONERGO MONTAZH

In 1948, Tsentronerгомontazh (Central Power Installation Trust) and its production activities made a great effort to complete the state plan in all particulars: installed capacity, higher earning capacity, and greater training along governmental and financial lines.

A number of important organizational, technical, and economic measures were instituted. Working plans and technological charts became the general rule in our installation sections. Mechanization of labor and mechanical equipment at installation sites were increased to a higher level. The number of machines used in installation work was increased by 200 units.

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In 1948, mechanization of vertical transport increased by 35 percent and is at present approaching 95 percent of full mechanization; mechanization of horizontal transport increased 30 percent and attained a level of 70 percent of all operations; mechanization in brickwork and preparation of solutions increased 38 percent, etc. The total level of mechanization in installation and brickwork rose 22 percent.

The trust designed, manufactured and put in operation a number of new installation machines: cranes on railroad platforms with a hoisting capacity of 7.5 tons, pipe cutters for high-pressure pipe 125 to 300 millimeters in diameter, brick-cutting machines, gas-pressure welding with an output of 8-10 meters per hour, and electric winches with a lifting capacity of 0.5 ton. The use of ultra-short-arc welding has doubled the welding output.

In 1948, a number of innovations were introduced which have saved about 400,000 rubles. We have worked hard to concentrate labor and material resources at critical installation points. We have also done a great deal of work on increasing the earning capacity of our enterprise, partly by means of keeping strict account of working time and losses. To reduce installation costs, account is also kept of repairs and spoilage, and padding of accounts is expressly forbidden.

Much stress is laid on training our crews. For instance, in 1948 many courses were given to prepare brigades of pipelayers, riggers, masons, and others. Seminars were held for engineers and technical workers, especially for practical workers. Technical instruction is now being supplied to about 1,000 persons.

As a result of all these measures, the plan for total work volume was fulfilled at the end of 11 months and will have reached 113 percent by the end of the year. Execution of the plan for boilers amounted to 100 percent of the year's plans and 209 percent of that for 1947; for turbines it corresponded to 122 percent of the year's plan and 173 percent of that for 1947.

In 1948, we increased our work productivity by 8 percent as compared with 1947. But we must, unfortunately, admit our inability to reach the quota set before us in this respect. These quotas were fixed for us at the beginning of 1948 based on 1947 data with certain increases. Moreover, at about the middle of the year, we went through some very great changes in the estimated prices for installation work. The price for work done by us was approximately 20 percent lower than in 1947. Obviously, if the value of work decreased 20 percent, the output per man per day is correspondingly reduced.

With respect to increased earning capacity, net savings in 1947 amounted to 10.2 percent of the total volume of work completed, while in 1948 the savings amounted to 11.7 percent.

It should be noted that one of the important results of the trust's work in 1948 was to master the installation and adjustment of high-pressure units. Six of the 30 installation sections attached to the trust have installed high-pressure units. Some of these units are already in operation at two plants (the "Gogres" and the Vladimir TETs) and are nearing the operational stage in the Nesvetay GRES. Skill in assembling high-pressure units was not acquired without trial and error, but it no longer presents any difficulties.

In 1948, we trained a better crew of Stakhanovites who greatly surpassed the usual standards; hundreds of them have a work output of 200 percent or even more. However, the enormous tasks of 1949 will demand further improvements in our work with considerable reorganization and elimination of present shortcomings.

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This year we organized a rapid installation procedure for a KP-231 boiler in the Igumnov TETs. The installation graph for this huge unit was computed for 105 calendar days, an average of 180 workers, and a peak maximum of 275 men. Installation was begun when the construction work was practically finished and the basic equipment was already on the premises. For the main units, the graph called for assembly of the framework and drums in 27 days, commencement of masonry work within 20 days, hydraulic work within 60 days after installing the boiler, and setting up the accessory equipment in 80 days. The maximum weight of a unit was 60 tons.

This experience in rapid assembly showed that with good workmen and intelligent organization of every link in the process, it is possible to complete such an installation in 100 days. For this reason, I do not agree with the opinion of Rogovin that combination schedules for construction and installation must be used in every case. From the instance just cited, we came to the conclusion that, if there is a good, strong construction organization, it makes sense to carry out the work successively: to complete the basic construction work, then the installation work, and finally to begin joint operations according to a combination schedule.

We are well aware that the use of a combination schedule cannot, in practice, shorten the time for installing boiler units more than about 6 months. If the construction work is in a state of readiness, it is possible to carry out an installation in 3-4 months. Consequently, this extra 1½ months or so can be turned over to the builders so that they can finish the frame and roof of the building, all foundations, ceilings and floors, and give the assemblers a chance to organize their work efficiently and not compel them to drag equipment over mountains of earth and timbers and other awkward spots because of lack of installation space.

Under the existing conditions of combination construction and installation work, we get in the way of the builders and they get in our way, and both sides lose time. I believe that if we assemblers had a chance to work when the construction work was ready for us, the labor required could be decreased 25 percent. Once the work schedules of all sections taking part in the project are clear cut, it should be possible to finish all construction and installation work in the same period as allocated for the combination plan. An individual approach is necessary in carrying out the work.

The next problem concerns the equipment received in the Podolsk and Taganrog plants. The large number of defects in this equipment can only be corrected at the expense of much working time and a resulting disruption of the installation program. Correcting defects in one boiler in the Taganrog Plant has already taken us 2,500 man-days. Factories should be obliged to deliver good-quality equipment.

The total price of equipment should not be paid on delivery. Ten to fifteen percent should be withheld until a final test can be carried out. This amount could be employed as compensation for losses incurred in work on defective machinery.

We must deplore the irresponsibility of certain operational organizations which insist on supplementary work not included in the original work project, even when the installed units are practically ready for operation. These organizations should study the plan in good time. Supplementary work and changes should be requested at least 3 months before installation of the unit is completed. Any additions to the plans not brought forward in due time should be made by the operational organizations themselves.

We the workers of the Tsentroenergmontazh Trust, realize that we have many shortcomings and faults. Nevertheless, we are confident that we shall overcome our defects and difficulties and cope successfully with the great tasks before us in 1949.

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REPORT TO THE CONFERENCE BY I. YA. TARASOV,
DIRECTOR, SEVENERGOSTROY

Sevenergostroy (Northern Power Plant Construction Trust) is composed of five Construction Administrations, two Installation Administrations, two Industrial Administrations, and a Planning Office. It is a complex construction and installation organization for the purpose of building steam-electric power stations.

In compliance with the resolution of the Collegium of the Ministry of Electric Power Plants, the trust instituted measures to improve its work. Nevertheless, the trust did not succeed in getting rid of many existing deficiencies.

After 10 months in 1948, the year's plan was 72 percent completed -- an increase of 44 percent as compared with the corresponding period in 1947; in the execution of the working plan, the increase amounted to 4.6 percent.

The enterprises belonging to the trust do not make full use of existing machinery. The plan for mechanizing excavation work was 81 percent completed for the first 10 months of 1948. This is explained by the fact that preliminary preparatory work in the area was not carried out in time. The plan for mechanization of plaster work was 34 percent fulfilled. Preparation of concrete and solutions, respectively, was 95 and 92 percent mechanized.

The trust made a study of the errors of the past year and exceeded the housing plan by completing 14,000 square meters of living quarters instead of the 10,200 called for by the plan for 10 months in 1948. It was expected that another 5,400 square meters would be opened up by the end of the year.

In 1947, the trust exceeded the cost price of construction and installation work by 29 percent. During 10 months of 1948, the estimated value was exceeded by 4.9 percent.

The trust became much more careful and thorough in analyzing the activities of construction sections and enterprises and in strengthening its control. It introduced monthly inspections by accounting commissions of the activities of departments, construction sections, and enterprises. This, of course, should have been done earlier.

In our future work, we must insist that managers handle affairs with greater care and be more economical of state funds. If we estimate the trust's actual overhead expenses in 1947 per million rubles of work completed as 422,000 rubles, we find that these figures were reduced to 256,000 rubles in 1948. In 1949, the trust must produce 25 million rubles more work than in 1948. We are entering 1949 better prepared and stronger in manpower and in material and technical resources. We must now make better use of our manpower and change our attitude toward mechanization and efficient business management.

We must also reinforce our manufacturing centers. For this purpose, the trust has planned a sharp rise in wall building materials (slag brick and blocks), production of assembled sections of reinforced concrete, prefabricated partitions, cornices, dry plaster, prefabricated sanitary units, and central heating plants and other construction articles.

We builders must be assured of adequate supplies of high-quality material. The wood situation is very bad. We never get sawed lumber. We are given so-called building timbers which include firewood, shoring timber or, at best, 18-centimeter logs. We want first-class housing, but we cannot get good wood for it.

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Wood for the trust was shipped from Arkhangel'sk. It cost 22 rubles per square meter, while the shipping cost was 170 rubles. In spite of the high shipping costs, the shipments from the Arkhangel'sk Main Administration for Wood Supply always consisted of 25 percent firewood and shoring timbers and 35 percent building timbers up to 18 centimeters, instead of sawed lumber. We rightly refused to pay on the ground that we had not ordered any such wood. We called in representatives of the Chamber of Commerce, who established the poor quality of the wood. Workers in the Ministry (on being informed of the situation by Daskovskiy and Platonov of our trust) and the inspection offices of the Ministry only requested that we explain why we had not paid for the wood. They did not assist us in obtaining satisfaction for the shipment of admittedly poor wood.

There are also great deficiencies in shipments of equipment. The Administration of Supplies does not treat this situation seriously enough. The turbines supplied by the Stalin Plant are an example of these deficiencies. The 50,000-kilowatt turbine No 1 was poorly made. Its rotor had to be replaced. Turbine No 2 came from the plant with serious defects. High-pressure turbine No 3, delivered in December 1947, has just been in the Dubrov GRES repair shop for 2 months. The Stalin Plant admits that this equipment was delivered with defects requiring repairs, but refuses to sign an official statement to that effect.

Personally, I believe that of late the work of the Central Staff of the Ministry has greatly improved, but there are still many shortcomings in the work of the main administrations. Metal is allocated by the Main Supply Administration and Glavenergostroy without taking into consideration the necessary grades.

By order of the Minister, a boiler must be installed in the Leningrad GES No 2 in April 1949. The trust must manufacture about 85 percent of all equipment. It is a big job to manufacture the shielded surfaces of a boiler; the Baltic Plant requires 3 months for it. But the Ministry, after all this time, has not yet decided whether or not alloy tubing will be supplied.

Since 1944, the trust has made no additions to its motor transport. We have no automatic dumpers. We should be assisted by the allocation of motor transport, tractors, bulldozers, compressors, and pumps.

The tasks entrusted by the Party and government to power engineers and builders are very great. The workers of Sevensnergostroy will take all possible measures to fulfill the 1949 plan with honor.

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