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USSR Report

ENERGY

No. 122

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ELECTRIC POWER

IRREGULAR DELIVERIES DISRUPT NUCLEAR POWER PLANT CONSTRUCTION

Moscow MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 7, 1982 pp 53-55

[Article by N. Gushchin: "The Primary Task--Rhythmicity of Supply]

[Text] By the time work gets underway at many construction sites in the nuclear power industry, a reliable base has already been organized for the production of ready-mix concrete, concrete reinforcements, embedded fittings, nonstandard prefabricated reinforced concrete and other structural elements. They are being delivered by a new type of enterprise--the nuclear construction combine. This makes it possible to employ high-speed production-line methods to construct the power units. As a result, the work time is reduced, quality is improved, labor expenses and the consumption of materials is kept down and the cost of AES construction is lowered.

The presence of production-base capacities makes it possible for the builders to cope successfully with the fulfillment of projected plans and to conduct the work strictly according to established schedules. The Southern Ukraine nuclear power plant, for example, is being built at a rapid pace. Tasks here for the first quarter of this year were completed by 105 percent. Even today the collective is working to run ahead of the schedule. The contract work-team principle is being widely used at the site. This has made it possible to reduce the standard work times by a factor of 1.5 to 2.

Far from all AES construction workers are achieving similar success. Moreover, there are delays at other facilities from month to month. In the first quarter, the plan of construction and installation work at the Kursk and Smolensk AES's was fulfilled. Frequent interruptions take place at the Rostov and Balakovo nuclear power plants.

To be sure, much depends upon the construction workers themselves, their labor activity and the level to which they organize their work. Here they have something to think about. It is necessary to create everywhere conditions that are conducive to improving the people's skills and to see that all the machinery is being employed at maximum loads. Much remains to be done in the extensive dissemination of progressive experience.

In conjunction with this it must be noted that frequent disruptions of the construction conveyer are caused by violations of the contractual obligations of the suppliers. There is a bit of folk wisdom that says that you cannot eat dinner without your spoon. Sometimes, however, this is frequently forgotten. There are instances,

for example, when a disruption occurs in the delivery of an insignificant amount of one type of material and the entire collective is fouled up. Dozens of vehicles and pieces of machinery, as well as work crews and other sections are idled, while the other materials and equipment lie about like so much dead weight.

Something similar took place in the first quarter during the construction of the reactor compartment of the Kalinino AES. The primary reason was the lack of certain grades of steel for concrete reinforcements which were not delivered on time. The same thing also happened during the construction of the first level of the machine room at the Balakovo AES.

If one looks at the reports regarding the deliveries of primary construction materials, the picture that forms is somewhat optimistic. More steel pipe and cement were delivered for the first quarter than were called for. With respect to rolled metal, the plan was 100 percent fulfilled. Only the deliveries of industrial-grade lumber were short, and by very little, at that--by 1,400 m^3.

"What is the matter?" you ask. The problem is that the rhythmicity of supply is being disrupted. The Cherepovets Metallurgical Plant did not deliver enough reinforcement steel in 36 and 40-mm diameters. The construction site of the Rostov AES did not receive 600 tons of this steel in 16-mm diameter. The Krivorog Metallurgical Plant disrupted the delivery of the steel. The Yenakiyevo and Makayevka metallurgical plants and the Dneprovskiy Metallurgical Plant imeni Dzerzhinskiy are among those in debt.

These enterprises, unfortunately, are not coping with their production tasks and systematically fall short in the delivery of a great amount of material necessary for the construction of nuclear power plants. As a result, valuable time is irretrievably lost.

The managers of many of these debtor enterprises promised to make up for the production shortfall in April of the first quarter. The majority of them kept their word. This, however, does not change the main point. The train, as they say, has already left. They will not be able to make up the lost time--time that was needed for the execution of construction and installation operations. A last-minute rush will not do anyone any good. One cannot justify the situation, therefore, by saying that the slow-up in supply has been eliminated. All measures must be taken so that such disruptions will not be allowed in the future.

Not all, however, were true to their given promises. The Nikipol Southern Pipe Plant, for example, even in April remained in debt to construction workers in the nuclear industry. The Rustavi Metallurgical Plant settled with the construction workers in its own way--it delivered 320 tons of defective 8-mm rolled steel. Having received a complaint regarding this, the plant did not respond to it at all, although it should have sent out its own representative immediately.

While criticizing the enterprises which disrupt deliveries and rhythmicity, it would be wrong not to blame the supply organs. They also bear responsibilty for the shortfall in deliveries. The Central-Chernozem, Moscow, Privolzhye, Northern Caucasus, Bashkir and other major territorial administrations are unsatisfactorily supporting the construction of AES's. Through the fault of the Southern Ural Main Territorial Administration, 390 tons of rolled stainless steel were not delivered in the first quarter. Builders of nuclear power plants were unsatisfactorily supplied with electrodes, electrical-installation and paint and varnish materials, protective clothing and bedclothes for living quarters.

Supply and sales organizations are given considerable rights which allow them to actively influence negligent suppliers. These rights, however, are far from completely utilized. If these organizations would strictly follow the situation with regard to the delivery of industrial and technical products, there would not be many disruptions.

Many territorial organs are not executing the necessary control over what the suppliers are providing to the builders of AES's and how long it takes them to do it. This so-called "gross-output" approach to the solution of an important state problem incurs considerable damage. Work at the Balakovo AES, for example, is in full swing. The builders need smooth deliveries of metal and lumber. Each delay is a lost day which cannot be recovered. Meanwhile, metal and lumber are being delivered here with interruptions.

Another side of the issue is proper control over the delivery of material resources to the constuction sites. Here, as they say, you must keep your eyes peeled. Some territorial administrations, however, forget about this. As a result, the surplus of metal and prefabricated reinforced concrete structural elements at many installations significantly exceeds standards.

Summer is the most favorable season to carry out construction operations. It is during this period that much can be done to fulfill socialist obligations that have been assumed, to bring lagging sections up to par and to come as close as possible to meeting deadlines for commissioning new power units at AES's scheduled to go on line first. In order to do this, however, it will be necessary to arrange things so that builders do not have a need for materials and equipment.

As the data indicate, however, not all supply organs take into consideration the fact that work on construction sites is conducted more intensively during the summer period than during the winter, and, subsequently, the sites will require more material resources. For example, Soyuzglavmetall planned deliveries of rolled steel for the second quarter in smaller volumes than for the first quarter.

Having noted this and other shortcomings in the supply of material and technical resources to AES construction sites, the board of the USSR State Committee for Material and Technical Supply planned specific measures which provided for the elimination of these shortcomings. Supply organs must increase control over the realization of funds apportioned for the construction of AES's. It is necessary to achieve this goal so that deliveries can be made in accordance with established priorities.

In order to resolve successfully the tasks that have been set, the territorial organs must not act in isolation from one another, but in close contact. Their interaction is impossible without the knowledge of the state of affairs at those enterprises which supply products to nuclear power plant construction sites. Thus arises the necessity to strengthen working ties with the managers of these enterprises and to render them assistance in supplying the material resources necessary for the manufacture of such products.

It is also important to maintain close contact with the corresponding ministries and departments. It is the latter that have been called upon to devote steady attention to the systematic introduction of progressive management methods at enterprises within their jurisdiction and to make sure that these enterprises fully carry out their obligations with respect to the delivery of products within established timeframes and in the projected amounts.

The plan of measures to improve the system of material and technical supply for the construction of nuclear power plants provides, for example, that the quarter's quota of rolled steel be delivered over the course of 75 days. Soyuzglavmetall and the territorial organs, meanwhile, have not achieved this. One of the reasons is the lack of reliable interaction with the USSR Ministry of Ferrous Metallurgy.

No less important are the contacts that territorial organs have with the construction organizations which are building the AES's. This will make it possible to know better how to utilize the valuable material resources apportioned for the construction of AES's and how to introduce into the economic cycle the supplies of prefabricated reinforced concrete, metal structural elements and other materials maintained on hand in excess of permitted standards.

As is well known, questions associated with improving the organization of AES construction and with insuring the absolute fulfillment of the program of developement for the nuclear power industry slated for the current five-year plan were discussed at a meeting of the CPSU Central Committee. Subjected to criticism were the directors of ministries, departments, construction and supply and sales organizations who had allowed nonfulfillment of planned tasks and interruptions in the delivery of necessary materials, machines and equipment. At the meeting it was emphasized that it would be necessary to implement additional measures which would insure that the construction sites were fitted out with the corresponding equipment and that the required resources were delivered. The efforts of supply organs and delivery enterprises must be directed toward the solution of these problems.

Rhythmicity of supply is today's key problem. Toward its solution must be directed the efforts of ministries and departments, enterprises and production associations and all supply and sales organizations. Among certain collectives directly involved with the fulfillment of construction tasks there has arisen a movement under the slogan of "A Green Light for Nuclear Power!" We must make sure that under this slogan works each person involved in supplying nuclear power plant construction sites with finished and raw materials, machines and equipment.

9512
CSO: 1822/2

PIPELINES

UKSSR GOVERNMENT, TRADE UNION ENCOURAGE PIPE EFFORT

Kiev PRAVDA UKRAINY in Russian 17 Aug 82 p 1

/Article: "Accelerated Rhythm for a Key Construction Project"/

/Text/ Within the UkSSR Council of Ministers and the UkSSR Council of Trade Unions.

The UkSSR Council of Ministers and the UkSSR Council of Trade Unions have issued a decree entitled "Measures for ensuring the completion of facilities for the mainline gas pipeline from Urengoy-Pomary-Uzhgorod in the Ukraine." The decree spells out the assignments for ensuring the completion in 1983 of the linear portion of this pipeline over a distance of more than 1,100 kilometers, including compressor stations at Grebenkovskaya and Barskaya. The decree also spells out several other measures aimed at the rapid construction of this important facility.

A republic-level socialist competition has been organized among the collectives of the construction, installation and specialized organizations for the timely and high-quality fulfillment of assignments for building and putting on line the facilities for the mainline Urengoy-Pomary-Uzhgorod gas pipeline within the republic. This includes the collectives of the enterprises and organizations which manufacture and deliver materials and equipment for this pipeline and which are designing the facilities for the pipeline. Results are to be tallied for each quarter.

To reward the winners of the socialist competition the following have have established:

-among the collectives of the construction, installation and specialized organizations, which are responsible for the construction of the linear portion of the gas pipeline and the compressor stations - two challenge Red Banners of the UkSSR Council of Ministers and the Council of Trade Unions with first money bonuses amounting to 5,000 rubles each and two second money bonuses of 3,000 rubles each. It has been established that the challenge Red Banners of the UkSSR Council of Ministers and the UkSSR Council of Trade Unions upon completion of construction will be permanently transferred to the construction administrations of the general contracting organizations, which achieve the

best results in providing the ahead-of-schedule completion of the linear portion of the gas pipeline and the compressor stations;

-among the collectives of the enterprises and organizations which manufacture and deliver equipment and materials for the pipeline as well as the designers of its facilities there are to be five diplomas from the UkSSR Council of Ministers and the UkSSR Council of Trade Unions with a cash bonus of 2,000 rubles each.

The UkSSR ministries and departments, executive committees of the local councils of peoples' deputies, trade union, Komsomol and economic organs have been advised to ensure a well organized socialist competition within the organizations and at the enterprises engaged in the construction of the mainline Urengoy-Pomary-Uzhgorod gas pipeline and the manufacture of equipment for it. They have also been advised to extensively undertake organizational and mass-political work to mobilize the collectives of construction, installation, planning and other organizations to fulfill their assignments on a timely and high quality basis in the construction of the linear portion and the compressor stations, and to deliver the equipment and materials for it.

8927
CSO: 1822/292

PIPELINES

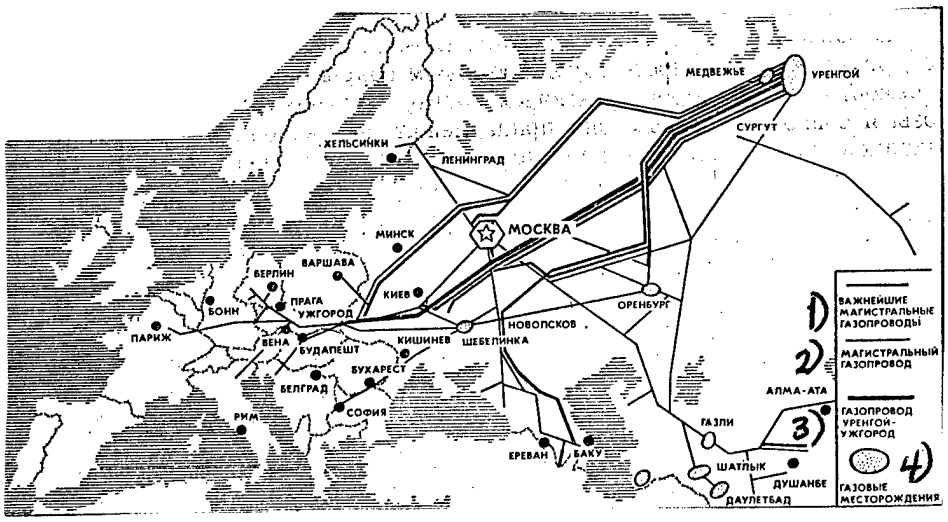
PIPELINE CONSTRUCTION ROUND TABLE

Moscow KHOZYAYSTVO I PRAVO in Russian No 6, Jun 82 pp 19-27

/Article by V. Sukhanov, special correspondent: "The Pipeline Moves to the West"/

/Text/ "The CPSU Central Committee has decreed that we are to consider the task of the USSR Ministry for the Construction of Petroleum and Gas Industry Enterprises, its collegium, the economic managers, the Party and trade union organizations of administrations, associations, enterprises and organizations to ensure the further speeding up of the technical reoutfitting and extensive adoption of progressive methods and leading experience of construction work as the basic and decisive condition for the successful realization of Comrade L. I. Brezhnev's assignment for the intensive development of the USSR's oil and gas complex, the forced increase in oil and gas extraction in Western Siberia as most important. It is to be viewed as an important component of the energy program for the 11th and 12th five-year plans."

(From the CPSU Central Committee decree "regarding the work of the USSR Ministry for the Construction of Petroleum and Gas Industry Enterprises in the technical reoutfitting and adoption of progressive construction methods.")



Map of gas pipelines in the 11th Five-Year Plan

Key: 1 - Key mainline gas pipelines; 2 - Mainline gas pipeline; 3 - Urengoy-Uzhgorod gas pipeline; 4 - Gas deposits.

Last year the editors of the journals KHOZYAYSTVO I PRAVO, PLANOVOYE KHOZYAYSTVO, MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE and SOTSIALISTICHESKIY TRUD met at a "round table" in Tyumen'. The meeting was devoted to a discussion of questions concerning the rationalization of management and the use of resources in the construction of the mainline oil and gas pipelines. The materials of the meeting, which brought together party, Soviet and economic managers from Tyumenskaya Oblast, were published * and elicited response ** from the ministries and departments which are engaged in assimilating West Siberian oil and gas deposits. They noted the urgency of the matters raised at the "round table" and the need to further improve the planning and management of pipeline construction and to improve material and technical supply as well as the legal regulation of economic relations, which arise in the creation of the West Siberian oil and gas complex.

A year has passed since the meeting at the "round table". This period of time was rich in events within the Soviet Union and for those engaged in the extraction of oil and gas in West Siberia. For example, there was the November (1981) Plenum of the CPSU Central Committee, at which Comrade L.I. Brezhnev, in a major speech, called the construction of the five major mainline gas pipelines from Western Siberia to the Center and the Urengoy to Uzhgorod export gas pipeline the key construction projects of the 11th Five-Year Plan. When these transport mainlines are put into operation, it will solve one of the strategic tasks for the development of the Soviet Union's economy - the intensive inclusion of Siberian natural resources in the national economy and a substantial growth in the USSR's power and energy potential. The Urengoy-Gryazovets-Moscow gas pipeline (a distance of 2,300 kilometers) is already in operation. And the construction of the Urengoy-Petrovsk pipeline (3,019 km) is now complete. The laying of two more pipelines has now gotten underway simultaneously: Urengoy to Novopskov (3,570 km) and Urengoy to Uzhgorod (4,650 km). Nearly 1,000

* KHOZYAYSTVO I PRAVO, 1981, No 5.
** KHOZYAYSTVO I PRAVO, 1981, No 12.

kilometers of each pipeline will pass through Tyumenskaya Oblast, which must play a primary role in the solution of this task.

Quite a bit has been done during the past year within the vast expanses of Tyumenskaya Oblast. The collective of Glavsibtruboprovodstroy /Main Administration for the Construction of Siberian Pipelines/ alone was responsible for the completion of nearly 1,600 km of gas pipelines in the first year of the 11th Five-Year Plan. It also built seven compressor stations and one oil pumping station, as well as many facilities to be used for cultural and day-to-day needs. Altogether in West Siberia last year some 12,000 km of pipelines and 63 compressor and pumping stations and 1,713,000 square meters of housing were put into operation.

The realization of the taut program provided a growth in gas extraction amounting to 30 billion cubic meters, including seven billion cubic meters in excess of the plan. This is a part of the task facing those who are to subdue the depths of West Siberia in the 11th Five-Year Plan. Seventy-five million tons of oil and 200 billion cubic meters of natural gas - such is the growth planned for them by 1985 as compared with the final year of the 10th Five-Year Plan.

There have been some positive changes during the past year in improving the coordination of actions. The Interdepartmental Territorial Commission, which began its work during this time period, is engaged not only with future planning but is also helping to more expeditiously solve current problems and increasing its control over progress in fulfilling the assignments handed out by the party and government.

For example, the commission supported the suggestion of the builders to complete the Novo-Kazymskaya compressor station one year ahead of schedule, which required a review of the approved layout for the sequence of completing construction projects. The commission also coordinated the efforts to organize the centralized servicing of equipment that is performed by the plant-manufacturers.

Legal support was also strengthened during this time period. The USSR Ministry of the Petroleum Industry developed branch normative documents including the "temporary instruction regarding work time and rest for workers doing work on the watch-expeditionary method", the "temporary instruction on the watch method of performing drilling work"; the USSR Ministry of the Gas Industry prepared a draft instruction on the construction of "turnkey" projects; and the USSR Ministry for the Construction of Petroleum and Gas Industry Enterprises compiled a general diagram for managing the construction of enterprises, etc.

The editors of the above-named journals decided to continue the conversation that they had started and to see what had been done during this time period in the construction of the Ob' River oil and gas pipelines and to learn how the questions raised at the "round table"

were being resolved. With this goal in mind they appealed to several managers of Tyumenskaya Oblast organizations who are responsible for this work section to tell them about the status of affairs having to do with the construction of the oil and gas mainlines. *

The department chief of the Tyumenskaya Oblast Party Committee, B. Trofimov; the deputy chairman of the Interdepartmental Territorial Commission on Matters Having to Do With the Development of the West Siberian Oil and Gas Complex (ZapSibMVTK), G. Alpatov; the chief of Glavsibtruboprovodstroy, N. Kurbatov; the chief of the Tyumenskaya Oblast main territorial administration of the USSR Gossnab, V. Zaychenko; the chief state arbitrator for Tyumenskaya Oblast, V. Zverev; and the deputy chairman of the Tyumenskaya Oblast Peoples' Control Committee, Yu. Sanin, discussed these matters with representatives of the editors of the journals.

We offer our readers a transcript of these talks with the commentary of our correspondent.

/Question/ How is the coordination of the actions of the planning and supply organs, the construction organizations in building facilities for the oil and gas pipelines and in developing the deposits, building of roads, etc., being improved?

/Answer/ B. Trofimov: In our meeting last year we talked about the results of poor coordination. But I will remind you of the problem we had in Surgut. From 1966 through 1981 the population of this city increased 10-fold. There are now 150,000 people living in this city and more than 400 enterprises and organizations belonging to 28 ministries and departments. And although the single customer for the construction of the city was the USSR Ministry of the Petroleum Industry, in fact the layout was accomplished by 26 customers. The consequence of such a mixed effort was the lack of a comprehensive solution of matters having to do with the engineering preparation for both the construction and the equipping with services. The temporary solutions on engineering support alone resulted in excessive costs amounting to an additional 30 million rubles. Right up to the present, for example, the city receives heat from 40 departmental boilers, while the housing fund and municipal services are provided by 20 offices which have different subordinations. According to estimates of Tyumen' scientists, the centralization in Surgut of just the housing and municipal services and trade makes it possible to free 2,250 workers for other work and to save 60,700,000 rubles.

What is being done about this and what has been done?

* Documents regarding the meeting were also published in the journals PLANOVOYE KHOZYAYSTVO (1982, No 5) and MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE (1982, No 6).

Oblast organizations continue to work on the construction of heating supply power unit at the Surgutskaya GRES and on organizing on its basis a central heating system for the city. In 1982 this power unit is to be completed.

The departmental lack of coordination is seen also in economic relations within the production sphere. For example, more than 15 main administrations, involving almost ten ministries, are now involved in the development of the infrastructure for the Novyy Urengoy deposit. Recently an additional organization was added - Glavurengoygazstroy /Main Administration for the Construction of Gas Industry Enterprises in Urengoy/. One would think that this organization would have some charts for coordinating actions. But this new main administration does not have the right to exert pressure on many of the subelements that are now in Novyy Urengoy. This includes, for example, the river fleet workers, upon whom they depend for the delivery of most construction and technical cargoes.

And as regards the central project here - Urengoy!? The USSR Ministry of the Gas Industry has been given the task of developing the needed infrastructure. Coordinate and act! One cannot succeed. At least up until this year they did not manage to accomplish this. The USSR Ministry of Transport Construction is building the roads and the USSR Ministry of Power and Electrification is providing the electric power. And one cannot find the responsible representatives of these organizations in Urengoy. A decision was made: to build 80 kilometers of roads with a paved surface in Urengoy. The plan called for 56 km, but only 8 km were actually completed.

N. Kurbatov: Everything is not what it should be with the designing work either. The institutes that are working for us are located far form Tyumen: in Leningrad, Donetsk and Kuybyshev. Their representative comes here, but what can he do by himself? This is a complex problem. They travel back and forth: they coordinate. Time is running out! Why not bring the design institutes closer to Tyumen' - especially those working on the mainline gas pipelines; this is what was done by the oil industry workers, for example?

G. Alpatov: Our Interdepartmental Territorial Commission ZapSibMVTK has created planning work directly at the construction site in order to better consider and combine the regional and branch interests and to eliminate economic disproportions. It has a difficult task: to find its place in the "enterprise-sector-Gosplan" system. And while the basic components of the economic mechanism of the enterprises and sectors were formulated within this schematic by various normative documents, there is nothing similar within the territorial-production complexes. To develop this mechanism and to combine it with the overall system of interactions between enterprises and sectors is one of the urgent tasks of the commission. Here is a local example: this year the USSR Ministry for the Construction of Petroleum and Gas Industry Enterprises promises to begin work on assimilating the new

West Siberian Yamburg gas deposit. But there is no instruction governing the actions of the different ministries and departments during the preparation period or preceding the development of the infrastructure of the deposit. This makes it impossible to develop documentation and to securely establish the construction work.

Correspondent: Time is running out. The first autotractor train carrying those who are to develop this rich deposit has already arrived in Yamburg. Nature is cruel here: temperatures down to 60 degrees below freezing and permafrost everywhere. How can roads be built? How will the units for the comprehensive processing of gas function in these conditions? How will they lay the pipes?

The Yamburg nut is strong. But it must be broken: in the first year of the 12th Five-Year Plan the Yamburg deposit must yield natural gas.

/Question/ What is being done to better coordinate construction work with the time periods for delivering materials? Has their completeness been improved? What has Gossnab done to reduce the above-norm supplies of material valuables?

/Answer/ N. Kurbatov: There is a system: the ministries-customers submit orders for pipes two years before construction gets underway. These deliveries are being made subject to non-formulation by documentation. I will explain the problem. At present, for example, orders for pipe deliveries are being made for construction in 1984. Documents for the construction of the pipeline, i.e., for the construction itself, are submitted one year before work is to commence. It evolves that they are buying the fabric for the suit, in this case without knowing the size of the man who is to wear it. This results in resizing and at times above-norm supplies. An example for today: the first quarter is coming to an end and the annnual program for the main administration's pipe requirements are provided and they continue to be shipped.

One could hope for improvements in the completeness of deliveries. For example, the time periods for shipping equipment for the compressor stations along the Urengoy to Gryazovets gas pipeline were stipulated in the contract with the customer - the USSR Ministry of the Gas Industry. The schedules for executing these deliveries were also submitted. For example, deliveries were to have been made in September 1980 for the "Long-Yugan" compressor station. But the station still has not been equipped with some 20 different pieces of equipment. Equipment for the "Sos'va", "Pripolyarnaya" and "Sorum" compressor stations was also late in arriving, which meant that these compressor stations were not completed on time.

B. Trofimov: It is true that the material-technical supply organizations permit pipe to be delivered in excess amounts and in incorrect assortments. The evidence of this lack of economic management is to be found along the paths of the pipelines. For example, along the

Urengoy to Chelyabinsk pipeline 18.8 km of large diameter pipe were tossed aside. After completion of the work during the winter of 1981 on the Urengoy to Gryazovets and Urengoy to Petrovsk gas pipelines the builders abandoned 4.5 km of pipe on the paths. All of this is the result of miscalculations in planning and of a lack of responsibility.

Yu. Sanin: The oblast Peoples' Control Committee checked the storage of material valuables, in particular pipe, within Tyumenskaya Oblast. This check encompassed more than 10,000 km of oil and gas pipelines. As a result some 92 km of pipe were lifted out of water. Another 161 km of pipe had been picked up on the paths and 1,430 km of pipe were shipped out from flooded areas. Those responsible were punished. But the fact of such irresponsibility is cause for alarm.

V. Zaychenko: We can avoid pipe losses on the paths of the pipelines. Many specialists are now being taken into the acceptance commission, including even doctors. But there are no supply workers within the commission. Our representative would not sign a document accepting a pipeline until all material valuables were removed from the path of the pipeline.

The problem is that the pipe is not allocated to anyone in particular: the ministry determines the total amount required, but as to who specifically will receive it no one knows. Nor do they know which specific pipeline is involved. The lack of a specific customer is becoming one of the reasons for the lack of sound economic planning.

In connection with this I will repeat the proposal made, but not realized, at the "round table" last year: a special section must be incorporated into the design-estimate documentation for the construction of mainline pipelines. This section would describe the organization of material-technical supply and would include the geography of the deliveries and examples of the transport layouts.

G. Alpatov: ZapSibMVTK also has proposals for putting pipe into economic circulation. Particularly pipe that has been in storage for a long period of time. First, we believe that it is necessary to include in the accounting record (form 2SN) an indicator for the availability of pipe, which has been welded into a strand and which has been laid but not handed over to the customer. Secondly, Gossnab must deliver pipe only in the amount needed for the construction planning period, taking into consideration the amount of pipe remaining. And thirdly, we feel that the USSR Ministry of the Construction of Oil and Gas Industry Enterprises should take an inventory and mark the pipe that was delivered previously (right up to the year 1981). We believe that it would be useful to ban the use of pipe in this year's construction that is being delivered now. In addition, the USSR Gossnab has made a suggestion that concerns the organization of supplying pipe to construction sites within the West Siberian oil and gas complex. This includes the creation of storage bases in the northern regions of the complex and releasing pipe to the builders only

in the amount actually needed for the planning period in accordance with approved title lists and taking into consideration the amount of pipe that was carried forward.

Correspondent: In our opinion, it would be wrong not to discuss the positive side of this problem and what was done during the past year in regards to deliveries. For example, we must point out that imported pipe is now reaching the construction site only at the appointed time and ahead of schedule. Insulating and welding materials are delivered to the construction sites in accordance with the national economic plan. In recent times the percentage of completeness of deliveries has risen. Thus, insulating film, adhesives, and protective wrappings are being delivered in assembly and in required proportions. While last year it was not so easy to find a base where materials and equipment were stored in accordance with the rules, now visitors for an exchange of experience are to be found at the bases of the trusts Samotlorpromstroy, Tyumen'gazstroy, Tyumen'gazmekhanizatsiya, and Tyumen'spetskomplektgazstroy. But this is only the tip of the iceberg. Other bases are needed which could receive pipe: in Urengoy, Ser'gino and Tobol'sk. If the decision has already been made about their construction, the means have been allocated for this. But, the estimate was reduced and the bases are not being built.

This situation must be straightened out in the near future. And it is the designers who must have the first word: how many, where and what sorts of bases are needed in West Siberia to provide the uninterrupted supply of all that is needed to the construction projects.

/Question/ How are the contract obligations being met? Who of the careless counteragents would you like to name in particular?

/Answer/ B. Trofimov: In this regard I will note that the transportation organizations, and particularly the RSFSR Ministry of the River Fleet, are showing little responsibility for the condition of the pipe that they are transporting. Sometimes they unload them from barges onto unequipped and flooded sites. And the administrations of the production-technological assembly trusts are not demonstrating the needed exactingness toward the enterprises of river and railroad transport for damage to pipe. Frequently the result is that the damaged pipes are not being repaired and are not being used. We believe that the transport organizations should be made more responsible for the condition of the cargoes that they deliver.

V. Zverev: In recent times the number of cases reviewed by the Tyumenskaya Oblast State Arbitration for Capital Construction has increased. Thus, while in 1979 there were 292 such cases, there were 360 last year. The number of fines has increased significantly: 2.4 and 5.1 million rubles respectively.

What is characteristic? There is a particular increase in the number of claims being made for unfinished work. Approximately one in every five or six jobs in capital construction is subjected to scrutiny for damage caused by waste in work. Thus, a fine amounting to 12,300 rubles was levied against the Nadymgazpromstroy Trust for failing to eliminate unfinished work on compressor station No 5 in the first strand of the Komsomol'skoye-Surgut-Chelyabinsk gas pipeline. Sanctions were used against this trust on two other ocassions. The Arbitration organization's report was sent to Glavsibtruboprovodstroy and the project itself was placed under control. After a certain period of time the unfinished work was eliminated and the station was put into operation.

We initiated quite a few claims according to materials of the oblast office of Stroybank, with which the Arbitration office has established close contacts. Based upon the importance of the facilities being built, together we plan which of them to take under control, when and where to check the carrying out of contract conditions. Following these checks the arbitration authorities when necessary institute action on the use of sanctions against careless counteragents. Thus, on the basis of materials of Stroybank we examined the possibility of levying fines against the Yugansktruboprovodstroy trust for failing to complete work on the 0 - 140 km sector of the Yuzhno-Balykskiy GPZ /gas refinery/ product pipeline to the Tobol'sk petrochemical combine on time. The arbitration office determined that this was a flagrant violation of the conditions of the contract by the subcontractor. Increased sanctions were used and a 87,150 ruble fine was imposed; the money was paid into the all-union budget. In the course of the meeting it was explained that this product pipeline is being built by three trusts of Glavsibtruboprovodstroy and that the work is proceeding unsatisfactorily along the path of the pipeline. In connection with this all work on the product pipeline was taken under the control of Stroybank and the arbitration office and Glavsibtruboprovodstroy was notified of the action.

What were the results of such reports and particularly the later case that was just discussed?

After a certain period of time the management of the main administration responded that in organizing the construction of the product pipeline the necessary order was established and measures were taken to eliminate the shortcomings. At the same time the management of the main administration, it was reported later, is examining one of the reasons for the situation that has evolved in the inadequately clear legal work within the collectives of these trusts. In connection with this there were seminars and meetings, where the problems noted by the arbitration office were discussed. Also monthly training courses were organized and conducted to raise skill levels of the legal services workers and workers from the estimates and contract and production-technological departments of the construction trusts. In several subelements vacant legal positions were filled and the

USSR Ministry for the Construction of Petroleum and Gas Industry Enterprises was asked to create legal offices and groups in those administrations of the production-technological assembly trusts and at the motor vehicle bases of the main administration where there were none.

Correspondent: The latest data: up until now within Glavsibtruboprovodstroy the positions of legal advisors in the UPTK /production-technological assembly administration/ of the Urengoytruboprovodstroy, Priob'truboprovodstroy, and Kazymgazpromstroy trusts were not listed. As before the personnel staffing does not require legal advisors within the Orgtekhtruboprovodstroy trust and in the UMTS /material-technical supply administration/ of the Glavsibtruboprovodstroy administration itself. And, apparently, it is no accident that the arbitration office is especially frequently examining claims against these very organizations. Contract work is poorly organized here. Last year, for example, the Kazymgazpromstroy and Urengoytruboprovodstroy trusts concluded subcontractor contracts as late as May. This year the picture with concluding contracts is no better. They are late both in drawing up the contracts and in submitting the planning and estimate documentation. By the beginning of March of this year the trusts of Glavtyumen'neftegazstroy /Main Administration for the Construction of Petroleum and Gas Industry Enterprises in Tyumenskaya Oblast/ did not receive documentation for more than 64 million rubles worth of work for the 1982 construction and installation work plan. This represents one seventh of all construction and installation work for the year.

/Question/ The development of which normative documents in connection with the problems raised here today do you believe to be necessary?

/Answer/ N. Kurbatov: We are trying to fill in the gaps that exist in our subelements in the legal regulation of relations through our branch normative development work. Thus, last year a component part in the "comprehensive system for managing the quality of construction" of the main administration was the "sequence for preparing documents for filing claims for deliveries of substandard pipe and disrupting pipelines during the testing period", which was compiled by the legal service of Glavsibtruboprovodstroy. This document contains all legal norms, with which the workers must contend while laying the pipelines. There are two other local normative documents - an agreement concerning the protection of labor and safety equipment and also on questions having to do with economic activity in capital construction - these documents were prepared with the help of scientists from the Sverdlovsk Juridical Institute.

This is the normative development work that we are doing ourselves within the main administration. Unfortunately, a no less important area of work falls out of this: normative development work at the ministerial level, for example. Thus, quite recently, in January 1981 the SNiP /construction norms and rules/ governing "mainline pipelines"

went into effect; it was approved by the USSR Gosstroy. As they say this is a fresh document. It would appear that it provides a basis to expect that the collection of materials would take into consideration the conditions of our construction work this year. But here are the paragraphs describing the laying of the pipeline in the ground. What are norms for Central Asia and what are norms for us. A "step" for pipelaying in the central regions, for example, is one kilometer and it seems that it is the same for working in the tundra? But in the tundra one cannot always cover a distance of one kilometer in a day. And the initial leg of the pipelines is in a permafrost area. What rules are we to be governed by? We page through the book. None are provided!

B. Trofimov: I remind you that in the charters of the transport organizations it is necessary to stipulate that they must increase their responsibility for the safe delivery of the cargoes that they carry.

G. Alpatov: In our opinion there is a need to come up with a definition of what comprises the West Siberian oil and gas complex. We have several documents which say that the "West Siberian complex is the aggregate of enterprises, organizations and institutions...". In deciphering this concept we see that they are engaged in drilling, extraction, and processing. Consequently we see that this includes about eight different sectors. But what about transport and construction materials? How can we get along without these? Our opinion everything that comprises the "complex" in practice should be reflected in the appropriate normative documents.

To continue. There is an instruction on our commission which lists its duties. According to this instruction, our participation in the development of the complex consists of developing proposals and issuing recommendations. We believe that the commission must not only discuss these or other problems with the involved parties, but must also make decisions and formulate them as a protocol so that we can know who to ask. Our ties with the ministries are now in disarray: we can act only through one level, i.e., through the USSR Gosplan. We believe that, in considering the location of the commission, it would be wise to give the commission the legal right to coordinate matters which are included in the functions of Gosplan departments on a regional basis.

Correspondent: Much hope is placed upon the work of the Interdepartmental Commission in helping to solve the problems of the oil and gas complex in Western Siberia; already its first steps attest to the effectiveness of creating such a commission directly at the construction project that is being planned. Now we must improve its legal situation, which will make it possible for the commission to do a better job.

And one must agree with the opinion that the lack of legal foundations, which clearly regulate the organizational and economic forms of work included in the territorial-production complex of the subelements of the various ministries and departments, reduces the efficiency of the work of these subelements and does not permit them to make full use of production reserves. This is a fair comment, in our opinion, both in regards to the proposal to increase the responsibility of the transport organizations for the safe delivery of the cargoes that they carry and in regards to the reproach from the builders about the lack in the "Mainline pipelines" SNiP of norms and rules governing the conditions of laying oil and gas mainlines in conditions of the North.

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Speaking on 30 March 1978 before party and economic managers from Tyumenskaya Oblast, Comrade L. I. Brezhnev emphasized the need to more fully and efficiently use available resources and pointed out that particular attention must be given to questions of capital construction. He also pointed out that there must be no disruptions in the schedules for completing production capacities. It is thought that this instruction is appropriate for the workers of West Siberia, who are solving the key tasks of the 11th Five-Year Plan, today as well.

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PIPELINES

PIPELINE CONSTRUCTION REPORT

Moscow IZVESTIYA in Russian 19 Jul 82 p 1

/Article by B. L'vov and G. Panushkin: "The Great Construction Project of the Five-Year Plan: In the Rhythm of the 'Workers' Relay Race'"/

/Text/ The first 300 kilometers of large diameter pipe have been welded into place on the Urengoy to Uzhgorod pipeline.

Along almost the entire 5,000 kilometer stretch of the route from Urengoy to the Carpathian Mountains work is steadily moving forward. The first 300 kilometers of the export mainline have been welded into a "strand". More than 1,000 kilometers of sections of pipe of the future gas pipeline have been readied at welding and installation bases, from which they are transported around the clock by gigantic pipe-carrying trucks to the route for connection into a continuous line. In the Urengoy tundra, the spurs of the Ural Mountains, in the autonomous republics of the Volga River region they are clearing the path, cutting trees, digging trenches, and are beginning to insulate and lay the readied pipeline. Brigades of divers and builders are leaving for the shores of the numerous rivers. The first 100 kilometers are ready to receive the natural gas.

In the "gas corridor" along the export route two more mainlines from Urengoy to Yelets will be built during the current five-year plan. Work here will take more than one year. For this reason along with the production bases and assembly and repair points the construction workers will establish some 53 field housing sites. They will do this work for good reason giving careful thought to equipping them well while achieving a maximum of conveniences and comfort.

But the workers of the USSR Ministry for the Construction of Oil and Gas Industry Enterprises are not inclined toward taking it easy. As everyone knows the construction of the Urengoy to Uzhgorod is being done on a compensation basis in accordance with the largest in international history of trade-industrial relations agreement, which has come to be called symbolically the "gas pipe". The agreement, in which West Germany and several other nations are participating, will make it possible to a given extent to augment and stabilize the fuel and energy balance of the involved governments and to provide work

to thousands of workers through the production and delivery to the USSR of large diameter pipe and some equipment in exchange for Siberian natural gas.

In response to the attemt of the USA to disrupt the construction of the transcontinental gas pipeline from Urengoy to Pomary to Uzhgorod and to the so-called "sanctions" of Reagan we have had widespread meetings and workers' assemblies. The participants in these meetings - along the path of the pipeline, in the machine building enterprises and in the designing and research institutes - have unanimously asserted their resolve to get by without the foreign "benefactors" and to introduce new reserves which will enable them to complete the construction project ahead of schedule.

The newspaper IZVESTIYA has already reported on the decision of the collectives of the associations of the Leningrad Nevskiy Zavod imeni V. I. Lenin, the Sverdlovsk Turbomotornyy Zavod and others to speed up the production of equipment for this key project and that many collectives have chosen to participate in the competition on the "workers' relay race" principle.

The CPSU Central Committee and the USSR Council of Ministers have approved the patriotic initiative to ensure the timely completion of the mainline gas pipeline from Urengoy to Pomary to Uzhgorod.

Good news is coming in these days from all sectors of this enormous construction project and from the machine building enterprises and the scientific-research and designing institutes.

V. Volkov, who is working on the main shoulder of the pipeline and who is a brigade leader in the Severtruboprovodstroy /Northern Pipeline Construction Trust/, has reported that "by the 60th anniversary of the formation of the USSR I will have fulfilled assignments which were to have taken two and a half years of the five-year plan."

His comrades have supported this initiative. They include the collective of V. Madenov's column, which is headed up by the brigade of B. Diduk; the crews of the pipe-section transporters B. Rybalko and O. Baklenov. The increased pledges of the Nadym construction workers rely both on the personal mastery and a solid technical base. Within the trust progressive methods of executing the work are being introduced successfully. They have switched to automatic welding using two chambers and have refurbished the welding racks for two centering guides; they are adopting lines for the automatic welding; and they are making extensive use of circular metal brushes for cleaning the edges of pipe. They have assimilated new pipe welding bases of the BTS-152V type for the two-sided automatic welding of 1,420 mm diameter pipe, new PAU-1001V units which are equipped for welding pipes which have been insulated at the plant.

With each day the pace of rotating welding increases within the collectives of the Komsomol'sktruboprovodstroy /Komsomol'sk Pipeline Construction Trust/ and Novosibirsktruboprovodstroy /Novosibirsk Pipeline Construction Trust/ trusts. Work is proceeding successfully on the road which will carry cargoes for building the compressor station.

Other participants in the "workers' relay race" are also keeping their word - the designers. For example, the collective of the Voronezh department of the Giprotekhmontazh /State Planning and Designing Institute for Equipment Installation/ Institute have completed work on the design for executing work at the Kurskaya compressor station a full month ahead of schedule. The high-speed assembly unitized installation has been stipulated, which calls for the maximum combining of construction and installation work.

The Leningrad machine builders will complete the assembly of the first series-produced gas pumping unit with a rated capacity of 25 MW by the end of this year rather than next year as planned. After this the units will come one after the other. The scientific-production complex which was established in Leningrad is capable of quickly and efficiently solving this task. The complex is comprised of well-known firms such as the Leningrad Metallurgical Plant, [illegible] the Leningrad Turbine Blade Plant and other associations.

All enterprises are manufacturing machinery on a cooperative basis. Scientific-technical problems are being solved in close contact of associations, academic, branch and learning institutes.

The production of domestic pipelayers, bulldozers and other construction equipment is increasing sharply in Sterlitamak, Cheboksary, and at the machine building plants of the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises itself, this includes those that are located in Siberia.

The flow of equipment created by Soviet scientists, designers and machine builders of the sector is increasing. This includes dozens of types of modern machinery and mechanisms for constructing mainline pipelines in any natural and climatic conditions. Included here, in addition to the heavy pipelayers, are powerful rotary excavators with a productivity of more than 1,200 cubic meters of earth, including permafrost, per hour; [illegible] explosive charges with a 25 meter depth penetration and a productivity of 300 cubic meters per hour; and the "Tyumen'" all-terrain vehicles, on the platform of which a powerful excavator can be installed. In addition, a solid welding base has been created.

The "Sever-1" automated welding complex, which is used for electrocontact automatic welding of large diameter pipe, is quite unique. In productivity it is dozens of times superior to manual welding and has no equal in the world. The "Sever-1" will join hundreds of kilometers of the West Siberian to Western European pipeline into a continous strand and it will have significantly speeded up the work.

Thus, the gigantic construction and installation conveyor is steadily picking up the pace of work. The considerable amount of experience that was accumulated by the builders and creators of the new equipment and techniques, the broad scope of the socialist competition on the "workers' relay race" principle, and, finally, the daily and all-encompassing assistance to the construction project by the party, local government and economic organs are a real basis for the successful completion of work within compressed time periods.

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KUYBYSHEV OBLAST PIPELINE REPORT

Moscow PRAVDA in Russian 6 Sep 82 p 1

/Article by V. Shalgunov, PRAVDA correspondent, Kuybyshevskaya Oblast: "The Urengoy-Pomary-Uzhgorod Mainline: Success of the 'Workers' Relay Race'"/

/Text/ The first stage in the operational testing of a gas-pumping unit for the Urengoy to Pomary to Uzhgorod gas pipeline has been completed.

Kuybyshev, Sumy, Leningrad, Kiev - the enterprises and design bureaus of these cities have transferred the "workers' relay baton" to one another and within very short periods of time have achieved a remarkable result. The unit displayed a high productivity and reliability. It was developed at a level equal to the best models of the world.

M. Pashchenko, an engineer and designer from the Sumy branch of a special design bureau for the creation of air and gas pipe cooling equipment, reports that "the capacity of the unit has been significantly increased. It can pump twice as much gas within a 24 hour period as electrodrive units which were used at a nearby compressor station of the Urengoy to Petrovsk gas pipeline. The high degree of compression is provided by an original blower, which operates in a two-stage circuit. We did not have anything like this before. The collective, which is headed up by chief designer N. Fedorenko, has found several efficient solutions."

The designers were primarily concerned about the maximum automation of the unit. The continuous operation of the compressor stations at remote locations, especially in conditions of the north, leads to many concerns and expenses. And there is a minimum number of maintenance personnel, three times fewer than usual. Another concern is the need to operate in an automatic mode and the possibility of using remote control. At present specialists from the Kiev Institute of Automation imeni 25th Party Congress, the Scientific-Production Association Burevestnik and the Lomonosov Specialized Installation and Adjustment Administration are preparing to hand over to the interdepartmental commission an automated system for monitoring the unit. The series production of such systems, which have a universal application, has already been started by the enterprises of the USSR Ministry of Instrument Making, Automation Equipment, and Control Systems /Minpribor/.

The collectives of the trust Kuybyshevtruboprovodstroy /Kuybyshev pipeline construction trust/ and its subcontractors worked tirelessly to build an experimental-industrial unit. The brigades of A. Safronov, N. Kirichenko, P. Mayorov, A. Ovchinnikov and others prepared the foundations and installed the technological pipelines and equipment within record times. The assembly of the unit itself was rather simple - its parts are delivered to the construction site in a fully plant-ready status. It was only necessary to join them together. Moreover, the sizes of the assemblies, which have a reduced amount of metal in them, are such that they can be loaded on an airplane or helicopter. This is an important advantage in roadless conditions! The unitized layout execution also makes it easy to service the unit. All assemblies, including the engine, can be easily removed and replaced with new ones.

The conscientious labor of the collective of the Sumy Machine Building Association imeni M. V. Frunze, which manufactured the important assemblies of the unit, deserves the very highest marks. The Sumy builders had previously attained a reliability standard in their work on the helium plant in Orenburg. American firms had attempted to stipulate extremely unsatisfactory contract conditions. We had to reject the transaction. The Sumy machine builders managed to manufacture the complicated highly-productive equipment, which was just as good as the imported equipment. And now once again they maintained the high reputation of Soviet machine building.

One of the features of the new unit, which distinguishes it from the traditional machines of this type, is the use of an aircraft engine. The Kuybyshev designers and engine builders, having modernized the engine, created a powerful drive for the blower. It performs reliably at temperatures ranging from plus 50 degress to minus 50 degrees, receiving its power from the same fuel that is flowing through the gas pipeline.

No one participating in the creation of the unit heard any harsh words. The work proceeded at an everyday, intensive pace to ready the unit for the second lengthy stage of testing in concert with the automated control system. They discussed the news from Chuvashiya: the Kuybyshev comprehensive Komsomol flow-line of L. Mikhel'son has added another kilometer of finished pipe on the Urengoy to Uzhgorod pipeline and is leading in the competition. The large family of the pipeline workers with the support of the entire Soviet Union is carrying out the work entrusted to it with honor and virtue.

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PIPELINES

CONSTRUCTION OF PETROVSK COMPRESSOR STATION BEHIND SCHEDULE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Jul 82 p 2

[Article by V. Isayev, head of the department of the editorial staff of the newspaper LENINETS: "Construction Site Without a Conductor"]

[Text] This compressor station is located not far from Petrovsk, on the route of the Urengoy-Novopskov gas pipeline. Number 25 on the line, in the second quarter of next year it should already be operating. It would seem that there is time. But the current rates of construction are such that it may not be enough. In 8 months of work not even the contours of the auxiliary rooms and main shop where eight powerful superchargers should be placed have been designated.

Monolithic reinforced concrete foundations for them should have been installed in April. Only three were ready by the end of the first 6 months. The closed platform for storage of equipment and the service block are being installed at low rates. But the general contractor, trust No 2 "Sarotovgaznefteprovodstroy" seems not to notice the lagging.

The leaders of the trust, the head I. Pil'nik, were not concerned that the work front be covered more rapidly by the subcontracting organizations. Many of them should already have completed work, but they have not even appeared at the site. Those organizations which have arrived are not working at full force.

"Our brigade," said the brigade foreman of installers of SMU-1 M. Ivanov, "is often lagging because there is not enough concrete, there is a delay in the shipment of columns and cross bars."

"We are now installing the repair-operation block," the man in charge A. Andrianov enters the conversation. "The rates are very low. The reinforced concrete structures are shipped irregularly, and the sequence of their shipment is mixed up. As a result of the planned volume of work worth R 212,000, only 12,000 has been fulfilled."

The discrepancy in the shipments of reinforced concrete has been noted many times at the planning sessions which are held at the construction site. However, the Saratov trust "Zhelezobeton" of Glavprivolzhskstroy has not taken the proper measures in order to improve the situation.

By the way, the important object is being held back not only by the lack of discipline in the suppliers of the structural parts. The machine operators of administration No 22 which is performing the excavation operations is not distinguished by high discipline either because of absences from work which occur fairly often, and equipment is idle.

Having encountered an object of such purpose as a compressor station for the first time in its practice, the general contracting trust is indecisive in the leadership of the construction site. Back in the autumn of last year, the trust delayed in every possible way takeover from the client of the area. The laying of a road was delayed for a long time which created additional difficulties. The trucks with the freight could not travel to the facilities. As a result, starting from April up to the middle of May, the construction of the compressor station was actually halted.

Now the first violin in the construction orchestra is the mobile mechanized column No 378. However, the technical potentialities of this organization are low. The mortar-concrete assembly which it has is not very powerful and it does not provide the construction site with concrete. The assembly is also located several kilometers from the site. A concrete assembly should be installed in direct proximity of the erected station because there are artesian wells already here. But the general contractor is not using this potentiality.

A headquarters is operating at the construction site. Every Tuesday it discusses the course of construction of the station. But meetings are held first by the representatives of the central board, then the trust, and there is no one person who would be responsible for the entire facility. Without this conductor it is difficult to set up smooth operation of 20 organizations who are subordinate to different trusts.

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PIPELINE CONSTRUCTION REPORT GIVEN FROM YUGAN RIVER

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 22 Aug 82 p 1

[Article by V. Grannik, our correspondent: "Ahead, the 'Blue River'"]

> [Text] The mobile correspondent point of KOMSOMOL'SKAYA PRAVDA reports: "On the Urengoy-Uzhgorod route 500 kilometers of gas pipeline have been welded into a line. Intensive work on the evening of the forced crossing of the Yugan is going at full speed."

I was able to talk with the chief engineer of the trust "Komsomol'sktruboprovodstroy" Yu. A. Fedorov only on the way to the route. These days there is no time to sit in offices. Yuriy Aleksandrovich related:

"Our section on the Uzhgorod trunkline is 200 kilometers. A hundred and forty of them are swamps. The task is to lay the pipes on the dry segments of the route before the frosts."

There are 60 kilometers of dry sections. Having said this, the chief engineer laughed. Soon it was clear why. We arrived at this section, sand, an even road, and suddenly on the next turn, a pipe layer sunk up to the cab. It moved to the Uzhgorod route, and "sat" on the reliable place, on the log road laid not so long ago.

So these 60 kilometers are not at all simple. A day later I heard a selector meeting which was held by the deputy head of the trust N. N. Likhograyev. Reports were given from the settlement of Kommunisticheskiy.

"Nikolay Nikiforovich! Seven kilometers of log roads have been laid to the river. Pipe carriers have been sent on a trial inspection. They passed but just barely. We have to add more fill. Give the command to the machine operators."

"You will have equipment. We will finish with the road and immediately organize a crossing over the Yugan in order not to delay."

Near the station Sobolinoy the brigade of welders of Viktor Logvinov is working on the route. I visited there at an important moment: coming to the Uzhgorod trunkline, the fellows were to weld the first butt joint.

The brigade foreman sat on top of the pipe and directed the actions of the machine operator-pipe layer Aleksey Yeremenko. He maneuvered the length of pipe, holding it on a weight. It is jewelry work to center two lengths. The pipe is almost half a meter in diameter and the gap is 3 millimeters. Only 3, no more no less. It is done! The main seam is confidently welded by the most skillful. These are the veterans Yevgeniy Aleksandrovich Vakhrushev, Adol'f Vyacheslavovich Musatov and the young people, Nikolay Medvedkin and Nikolay Sudakov. The brigade foreman is pleased: the seam has been excellent. This initiative will be continued.

The brigade of Logvinov has created a literal wonder on laying the gas pipeline Urengoy-Novopskov, 250-300 percent per shift, and this is 1.5 kilometers and more. The line part of the gas pipeline was constructed several months ahead of schedule mainly because of the efforts of this collective.

"I am pleased with my fellows" says the brigade foreman, "we have been together for about 10 years already. We were based in the Chelyabinsk trust. We did not search for easy routes. Therefore we are here in the north. Our supplements, the young people, become accustomed to the brigade and acquire confidence."

After the first butt joint there followed a second and third. The brigade moved forward at a rate customary for it.

I was a witness to the following: it was necessary to move the equipment urgently from one section to another. At night. A call came from a dispatcher station to Sobolinaya. And Valentin Chernik, Nikolay Obraz, Mikhail Makeyev spent all night with this emergency work. The next day, they worked as usual on the scaffolding.

These people hold in their hands the key to the route. They are the overwhelming majority in "Komsomol'sktruboprovodstroy." Redistribution to the new "corridor" took place on short schedules. The equipment which had noticeably "tired" at the previous routes was brought to a condition of combat readiness in a few days. From the first days of its existence, the trust set up good rates. The route unites the people. They have already fallen in love with the kray in which they are now living.

The route of the Uzhgorod gas pipeline passes in an uninhabited "corridor." This caused additional difficulty. The first of them was to build up the new areas and to feel at home from nothing. The miscalculations of individual leaders, the inertia of thinking, customary concentration only on the "pipe" and on production questions unfortunately had an effect. This is not hidden in Komsomolskiy: they should have thought earlier about the route cities and the daily life of the route workers, and more seriously. Then there would not be such unexpected situations where the trailers, standing without movement for several years in the old "corridor," seemed to be not so bad, but when they were moved they literally began to fall apart.

By the way, the enterprises who supplied the trailers should be criticized. For example, the Bugul'minskiy, Bolokolanskiy plants fulfill the orders of the ministry in far from complete volume.

Recently the "Komsomol'sktruboprovodstroy" severely criticized the office of the Soviet party raykom: construction of housing is developing slowly in the settlement and all the plans are interrupted. The situation should be corrected as fast as possible. The mood of the route workers is being spoiled because the start-up of cafeterias and stores is being delayed in the field cities.

The trust has completed organizational reconstruction: instead of the customary administrations, cost-accounting production lines will be operating. Everything will be concentrated in one fist, starting from the cleaning of the route and ending with laying of pipe in the trench.

We returned already after dark. The pipe-carriers creep to meet us with rumbling. Fedorov glances into the space lit up by headlights:

"We are confident of success. Everything that we need comes to us in good working order. Pipes are coming from Japan. The overweights and insulation film, all is sufficient. There is powerful equipment. And the people, you have seen what kind of people we have! We will therefore fulfill our program ahead of schedule, despite the sanctions!"

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PIPELINES

LVOV PLANT PRODUCES PIPELINE COMPRESSOR STATION EQUIPMENT

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 18 Aug 82 p 1

[Article by F. Bil'din: "Green Light for the Order"]

[Text] Preparation for series production of complicated equipment for the compressor stations of the Urengoy-Uzhgorod gas pipeline has begun at the plant "L'vovpribor."

"Komsomol guarantee for the important order!" This was the initiative of the Komsomol-youth collective of installers-regulators headed by Aleksandr Aleksandrenkov. Assembly shop No 9 in which the fellows work, is young. Every second worker is under 30. Now they are involved in assembly, installation and regulation of the units for the gas pumping stations. The order for fabrication of the units of the new modification designed for the Urengoy-Uzhgorod gas pipeline did not take the workers of the shop by surprise.

"Shop No 9 has been producing unit A-705-15 for gas and oil pipelines of the country," relates the secretary of the plant committee of the Komsomol Vladimir Bat'kov, "for 3 years already. The workers of the shop are constantly going to the construction facilities where the units are being set up and pass the product to the customer from hand to hand. This accelerates a great deal the introduction and produces a great economic effect."

The brigade foreman of the regulators Yaroslav Sologub recently returned from a trip to the city of Gryazovets in the Volgod Oblast from the facilities of the association "Ukhtatransgaz." Together with the head regulator, the young Communist Sergey Mezin they trained the service personnel of the gas pipeline to operate the instruments, adjusted them and started them, and conducted preventive maintenance on the previously installed instruments. Our fellows are therefore obliged not only to fulfill the important order, but also to completely perform installation, adjustment and start-up of devices.

The patriotic initiative of the L'vov instrument builders is being reinforced even now by specific actions. Jointly with the council of young scientists and specialists, the young installers and regulators are now studying the technical documents for a new unit. A lot has been changed in its new modification. This study will make it possible to complete fulfillment of the order 10 days ahead of schedule. The leading working brigades of Komsomols Dana Yavor, Dmitriy Sabatovich, Yevgeniy Simets and others are assigning the tone in the studies.

However, the success of the assemblers depends on how the entire collective of the plant works, and all the involved subdivisions. The workers of the enterprise understand this.

During the meeting against the discriminatory measures of Reagan which took place at the plant, the brigade foreman of the section of the central assembly shop No 32, delegate to the 19th Komsomol Congress Galina Yatsyshena called upon all the production engineers to support the initiative of the brigade of Aleksandrenkov.

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OBLAST NEWSPAPERS REPORT ON PIPELINE CONSTRUCTION

Moscow EKONOMICHESKAYA GAZETA in Russian No 35, Aug 82 p 13

[Article by T. Trofimova: "Out-of-Town Editors on the Route of the Urengoy-Pomary-Uzhgorod Gas Pipeline"]

[Text] Special appendices have begun to be issued for the oblast newspapers ZVEZDA (Perm Oblast), VOLZHSKAYA KOMMUNA (Kuybyshev Oblast) KURSKAYA PRAVDA and for the republic newspaper PRAVDA UKRAINY at a number of sections of construction of the Urengoy-Pomary-Uzhgorod export gas pipeline. They are being issued jointly with the press center of the Ministry of Construction of Oil and Gas Industry enterprises and come out once or twice a week.

In one of the last issues of the appendix to PRAVDA UKRAINY under the title "Each Kilometer Ahead of Schedule" it is reported that the collective of the comprehensive production line No 1 of the association "Soyuzintergazstroy" has been obliged to complete main operations on the first 60-kilometer segment of the gas pipeline in the eastern Carpathians by the 60th Anniversary of the Formation of the USSR.

The next issue of the Perm ZVEZDA discusses the high limits which the gas builders of the trust "Tatnefteprovodstroy" have set. They have decided to complete line operations on the 214-kilometer route in the fourth quarter of this year instead of the third quarter of 1983.

A conversation is published with the head of the trust "Uralneftegazstroy" V. Barmin. The collective of this trust is involved in laying the line part of the trunkline and building the compressor stations.

"Our facilities are mainly in the Gornozavodskiy Rayon of the Perm Oblast and in the region of the city of Nizhnyaya Tura of the Sverdlovsk Oblast," says V. Barmin. "The local organizations are giving us perceptible help. Dozens of dynasties of builders and installers of pipelines are working on the route. Hero of Socialist Labor, brigade foreman of installers Ivan Mironovich Davydenko is working with three of his sons."

One of the best in the route is the family crew of Levinyy. We are proud of our veterans, Heroes of Socialist Labor brigade foreman A. Poturnak, machine operator of the pipe layer A. Yeferin, and head of the mechanical workshops V. Orlov.

Contacts of the builders on the "worker's relay race" with the collectives of the plants supplying materials and equipment are being strengthened. I will cite such an example. Funds for wood-fiber boards for construction of the compressor station were allocated for the end of the year. The builders asked the workers of the Bratsk lumber industrial complex to accelerate their shift. Only 6 days passed when a car with boards was sent.

The sheet of socialist competition of KURSKAYA PRAVDA informs the readers about the leading experience of welding-installation work done in the all-union school.

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PIPELINES

PERSONAL STORY TOLD FROM PIPELINE CONSTRUCTION ROUTE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Aug 82 pp 1-2

[Article by N. Limonov, our special correspondent: "Boldinskiy Summer"]

> [Text] The entire country is watching the construction of the gas pipeline system which begins at the Urengoy field. Especial attention is being focused on the export gas pipeline Urengoy-Uzhgorod. Its route extends 4,650 kilometers through the taiga, swamps, rivers, and mountains, in uninhabited and densely populated regions.
>
> Work is being done by comprehensive production lines equipped with modern equipment. They are doing everything, from preparing the trench to delivering the finished section. But the gas pipeline is not only a "pipe" in a trench. It is also buildings for the gas pumping stations, settlements and communications lines. The builders of the gas trunklines have to work in the most difficult conditions, but they are doing their work well.
>
> Man is laying the route, and the route is educating him in persistence, courage and collectivism.
>
> With the essay of N. Limonov "Boldinskiy summer" (read on page 2) we open a new column which will publish stories about people and work of the most important construction of the five-year plan.

This was how it was.

Call the airport: Yurik is flying in. Send tank trucks to the route. Arrange the students. Decide matters with the police, collect figures for the selector meeting, select the linoleum for the reading room. Successfully come from the route for the arrival of my grandson. The devil only knows how much more work.

Thus, when she sat in the car it was already 10. Behind her was a representative from the trust, a specialist on standardization, who rivets his attention on his worn feet (its serves him right for coming to the route in foppish shoes!) and the correspondent flopped heavily on the seat. Only there was not enough room for him here! And so they went. No one in the car spoke.

We did not need this kind of weather, oh we did not need this, complained Valentina Yakovlevna, and these thoughts pushed into the background even the expectation of joy of the arrival of Yurik whom she had not seen for a month, and it already seemed she had not seen him for a whole eternity. Before the season of bad roads it was necessary to lay 30 kilometers of pipes, and then there would be no work. The drivers, aces of their work, on a dry route can only make two trips, and that is with getting up at 4:00 and finishing the work at 9:00. The head of the garage had been repeating over and over again for several days that it was time to give them a rest for a couple days in order to strengthen their nerves, and he was right of course. Today it is Sunday, in Bolshiy Boldin it is the holiday of flowers, the bus is in the city, but there are few customers for everyone left for the route before the dawn.

The brushes of the yard keeper hum monotonously, the depressed trees are standing, and for some reason the correspondent did not want to believe that namely here the great poet in the sad time had seen for himself fascination. As always in the beginning of a business trip, he did not know how the material would look, what kind of people he would meet, and he was uncomfortable inside because of this indefiniteness.

The road traveled along the route, and the pipe of the gas line was lying near by, somewhat simular to a large sated snake.

"Here," Belyayeva turned to the correspondent. "See it is a simple matter: we welded the base from two pipes a length, we take it to the pipeline, welded, insulated, bury it, restore the soil as it was. The peasant soil here has been fertilized by the sweat of welders, machine operators and drivers. But at times we have to cut even into the sown field.

My heart hurts, because we are working immediately on the entire route, from the marker 2479 to the marker 2598. According to science, all the people should work on one kilometer: they lower the pipe, the bulldozer recultivates, and on the same day the land is given back to the kolkhoz. A kilometer per day. Our commitments are 1200 meters per day. We are coping, but not always."

Valentina Belyayva was appointed the head of the line on the section from the settlement Yaz in the Gorkov Oblast to the river Moksha in Mordoviya in November of last year. Work began in February of this year. Until this time equipment and housing were rebased from Ukhta and transferred. Two weeks they lived in trailers at the station Uzhovka while they were serching for the place for the new city. Finially they found an old sand quarry on the edge of a pine forest. Valentina Yakovlevna loaded the workers together with their children and wives into buses and the place was approved. Now there is a city

with all the attributes which make temporary life permanent. Above the gaily decorated trailers and "barrels" there are antennas and bird houses, automobiles are near by. The children ride around on bicycles and mopeds, play in the fairy tale city cut from pine, and large good natured dogs follow them everywhere. A strong sapling is growing in the office of the head of the line, lord knows where she threw a orange piece into a pot and has been carrying it everywhere with her for several years.

In a word, this is the normal life of the route workers, but here is what is new in this life. Previously the route was built by four-five trusts, each in their specialization, and this looked like a standard construction site with its commotion, sep ration and indifference to the interest of the neighbor. Now one line on its section does all types of work and Valentina Belyayeva commands all of this work. Preparation is underway to move the line to a single contract for which the specialist for standardization has come from the welding-installation trust. The famous cost-accounting excavation brigade of Hero of Socialist Labor Yaroslav Antonovich Myakush is already bringing its equipment here from Novopskov.

The picture of pipelaying is full of beauty, greatness and some special elegance. Five 100-ton pipelayers, slowly following after each other almost close to each other, carefully hold the body of the pipe with their claw fingers on rubber wheels. The pipe is lowered into a deep trench. Belyayeva stops the car, and they stand at a distance. Thus people in the cities observe for hours the powerful movement of ice on a river.

Valentina Yakovlevna approaches the trench, and it seems that something does not please her. She waves her hand. The noise of the mechanisms stops and through the rain and interruptions in the wind we hear her excited voice. "Are you watching where you are laying the pipe?" She asks the man in charge. "It needs a soft pillow and there is a rock."

"Not a rock, clay." the moustached young man in the green raincoat on broad shoulders looks at her somewhat indulgently. Just like at a woman.

"No it is a stone. What if you break the insulation? What if there is an explosion? Do you remember that this will hold 75 atmospheres?"

"I have been doing this for eight years and I know my work."

"And I for 20 years, and I have never had a break. We must do our work cleanly and return the land to the kolkhoz workers. We have to do it so that no one around is afraid that 75 atmospheres is under him."

The correspondent listened to their conversation and thought people like this man in charge do not sow and do not reap, they are born. Although he is arguing, and another is looking at you, agrees and does everything the opposite. This is remaining from the old days, for the man in charge came from another department, but now there is one-man management and he is not allowed to get away with it. Valentina caught him, but with malicious joy he thought.

"If you have been on the route for 20 years and are such a specialist, you can also supervise," said the man in charge. "And I am quite capable of packing my trunk."

Then they talked, the head of the line furiously tore off her hat from her head, kneaded it in her hands and again pulled it on. Then she silently turned, pushed her hands into the pockets of her raincoat and decisively went to the car. There one brigade foreman was already sitting dejectedly. She had removed him from the route.

"These people do not understand. I say to the man in charge: "Volodya, why have you not lined 10 butt joints? And he says to me: The welder says that the deputy minister himself allowed him to weld in advance of the lining. I ask him again: the deputy minister is not obliged to know the technology of welding. But you are. Burrs on the body of the pipe means that the insulation can break. I collected the welders and for half an hour read them the specifications. And these are specialists."

Now she no longer removes her cap, but nervously ties and unties the laces of her raincoat and speaks in the voice of a tired person who is fed up with repeating the same thing to her subordinates, but who, however, is accustomed to getting her own way.

For a long we were silent in the car, the sun peeped out, and the birch trees on the side of the road illuminated by it, shake from themselves the heavy drops and stand beauties, turning to meet the GAZ car. For a long time Valentina was still bothered by her storming.

Yes, the route does not put up with familiarity and flippancy. In 1972, when the gas pipeline central Asia-center of the country was built, they came from Tuley and Adzhigelda for oxygen. Then she was wearing canvas shoes and at first did not notice that the driver was barefoot. And when the radiator boiled over it turned out that they had left without water. Never mind, the driver calmed her, we will get there. And then he said: the first few meters are the hardest. Then he was silent. Eight hours in the desert without water and without a road, what this is like only one knows who has been there. They got to the topographical triangle, and there they found tracks in all directions, but did not know which to follow. The driver somehow climbed on the sign, but saw neither end or an edge to the burning silence. They were only saved by the fact that they left late, and when suddenly night came upon them, in the distance they saw the lights of the compressor station where they had been that day. The driver could not walk, and she as she could dragged him. And at the compressor station they could not drink even the water as if everything burned inside. The driver then could not work for a long time, and never went into the desert in any case barefoot and without water.

And now this good-looking man doubts that she knows her work on the route. The Gorkov oil refinery is difficult to take in with a glance even from the air, and when she came there in 1957 after the technical school, camomiles were growing around the field. The route was started in 1962 when she and her husband were building the branch to Kostrom. In 1963, the oil line "Druzhba" stood in the Orlov Oblast, and 1965-1966 the route Shaim-Tyumen. Shaim-Tyumen is swamps and darkness and us in the middle. It is quite a wild place, taiga, and 500-meter pipes and equipment are brought in only by helicopter. She flew no fewer hours than any other pilot, and her head hurt from the noise of the propeller but how beautiful is our Siberia from a height.

In a word, Shaim-Tyumen, the swamps and the darkness well also not forget us. It was youth, people were in love with work and made up songs with an accordian.

> The winged helicopter flies back and forth.
> He carries those who are very strict with us.
> But he can see, this winged god,
> How we are living
> On the Sherdinskiy road.

And they lived as now, as they always lived, as one family. An event for a comrade is joy for the entire city. Korchagin Aleksandr, one of my best welders and his wife is a nurse. His father is also with us, a machine operator for many years on the route. Their daughter was born on the very day when the first length of the Urengoy-Chelybinsk line was tested.

Where we route workers have not been, what we have not seen. The apartment in Ukhta, we lived there perhaps a total of two months. Now an apartment in Podolsk, everything in a dusty pile, and we have not lived there even two days. Here, on the route, this is my house and these are my people without whom I simply could not live a day. The pig-tender Boris Basil'yevich, is a machine operator on the pipelayer and has been 27 years on the route. I worked back with his father. His wife Lidiya Konstantinovna is now our official in charge of quarters. She plays on the accordion and together we composed a song about the winged helicopter. I taught their daughter Ira to walk, and she is already married.

Who else is traveling on all the routes with me? Moiseyenko,Nikolay Vasil'yevich. His wife is in the boiler shop, and he is a welder, and they have two children. Gorobets,Petr Nikolayevich, is a machine operator. His wife receives the freight at the station, and his son Yura works for his father as a scaffold worker. How many families have we accumulated, dynasties of workers, probably more than a dozen. By the way, only the strong remain on the route. Anyonewhose only goal is to collect money will not survive. We have our own life, and I would never change this life for any other.

No I am happy, she summarized her thoughts, I have a good husband, a good son, a good grandson and good people around. As for the handsome fellow, the man in charge of the insulation-laying work, we still do not know where he will end up. Perhaps he will be one of us, if he understands what he has to do.

Her hands stopped nervously bending the laces of her raincoat and were calmly lying on the handle of the GAZ car. In a low voice she began to sing about the winged helicopter, although it was not winged, but that was how they had composed it. She was not a professional in this business, she was a professional in another.

The journalist sat in the rear seat and already knew that he would return to the editorial staff not with empty hands. This Belyayeva he thought is from those who represent their work not as an appendix to their personal life, but as a method of existence, and even not a continuation of that personal life. Work is simply life, and that is all period. It has long been decided and written. This is why is always light and festive around these people. This is why they always attract people who for no other reason would be attracted to them.

The sun was completely cleaned of clouds and the city of route workers was already visible. Valentina Belyayeva, having moved to a seat, was already trying to look among the children running around the territory for her Yurik.

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PIPELINES

PIPES SHIPPED ON NORTHERN RIVERS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 Aug 82 p 1

[Article by V. Busygin, engineer of Glavsibtruboprovodstroy: "Large Loads On Small Rivers"]

[Text] By the joint efforts of the river workers of the Irtysh steamship company and the subdivisions of the Glavsibtruboprovodstroy, a new water route has been developed which previously was considered unnavigable. On the taiga river of Kazym , pipes, equipment, housing trailers have been shipped to one of the sections of the central construction site of the five-year plan, the Urengoy-Uzhgorod gas pipeline.

The idea for this unusual expedition was born back in April. Then, in examining from a helicopter the Tyumen section of the Urengoy-Uzhgorod route, the head of the trust "Priob'truboprovodstroy" I. Sukharev noted near the upper reaches of the Kazym an excellent dry land landing site. But the feature of the small northern rivers is such that at the mouths they are shallow and it would not be easy to lay a new route on this capricious section of the water road.

They prepared carefully for the first trip. On the 105-kilometer segment of the river, about 200 navigational signs were installed. The most experienced navigators of the shipping company were appointed captains of the tows. Then the expedition, which was head by the head of the Khanty-Mansiy river port A. Dremov, captain-teacher V. Chadov, deputy head of the trust "Priob'truboprovodstroy" A. Gornitskiy set out on the long-distance and difficult passage.

Beloyarskiy, the base settlement of the route workers in the northern Ob region was behind the stern. Small motor ships "Vostok" and "Fregat" traveled in front of the caravan of ships. Their task was to explore the route, and help the tows in critical situations. Then followed the floating crane and barge which held 2,000 T of pipes.

There were many difficulties on the route for the participants of the expedition, especially on the steep turns of the river where the nose of the barge was sometimes separated by the shore only by centimeters. Once, when the most complicated section of the river road had been safely passed and it seemed the danger was over, a whirlwind suddenly flew out from the tops of the pine forest, and with a stiff wave beat against the side of the ships, and pushed them from the navigable channel.

Then the endurance and rich experience of the captains of the tows V. Goloshubin and N. Khlyzov came in handy. They were native Siberians and since age sixteen had been navigating river vessels. The man in charge of the section of passage operations A. Nikulin held a constant watch, temporarily becoming the navigator. Without knowing either sleep or rest, together with his assistants he measured the depth of the navigable channel, determining the safest passage.

This route lasted 18 hours. Others followed. As a result the builders of the gas trunklines were delivered 30 km of pipes of large diameter, trucks, pipe-layers, parts of the welding base,and house trailers. This is a great advantage in time. The line operations in the taiga are usually conducted in winter since in summer it is impossible to ship freight to the routes under construction because of the lack of roads. But this time the 30-kilometer segment of gas pipeline will be constructed before the onset of the cold. How can you evaluate the joint experiment of the Irtysh river workers and the builders of the Siberian gas pipelines?

"As we were convinced, the reserves of the small northern rivers are actually great," says the head of Glavsibtruboprovodstroy, N. Kurbasov. "The river workers of the Irtysh steamship company for the first time utilized them and our workers thank them for the help. All of us just have to be better prepared for the next trip. For if it had started two weeks earlier, then we could have shipped not 30 as this time, but all 90 km of pipes needed by the builders of this route section."

The strict schedules for construction of the Urengoy-Uzhgorod gas pipeline and other gas routes dictate to us the need to intensively work in the summer. This primarily depends on the river workers, who have not yet coped with the planned volume of freight shipment for the builders. For example, our base settlement of Beloyarskiy should have received through navigation by the Irtysh steamship company 683,000 T of freight. By 1 August it had only successfully shipped 347,000 T, and by the end of navigation only promises to ship no more than 50. That is about 300,000 T of freight again will remain at the transfer base in Sergino. We can only supply them to the builders in January when the Ob rises. But the central board does not have this quantity of transport (5,000 trucks).

There is only one way out of this situation, effective use by the shipping company of the great potentialities of the small northern rivers. This was recently discussed at a meeting which took place in the Tyumen party obkom. It is true that we were not able to fine a common language with the supervisory worker of the RSFSR Ministry of the River Fleet. We received the same answer to all our arguments about the primary importance of the central construction sites of the five-year plans: there are no barges. And they say that they will not travel on the small rivers when the water is drastically dropping.

Of course the river workers have many difficulties. But in these days remaining to the end of navigation, the entire small fleet should concentrate on most important central construction sites of the five-year plan. It is also possible to use tows with shallow draft in the shoals. At the mouth of the Kazym it is only neccessary to place another dredge in addition to the one that is already there in order to deepen the navigable channel.

The subdivisions of the Glavsibtruboprovodstroy have a large volume of line operations to complete in this route season. The success considerably depends on the river workers.

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PIPELINES

AZERBAIJAN PIPE ROLLING PLANT PRODUCTION DESCRIBED

Yerevan KOMMUNIST in Russian 19 Aug 82 p 2

[Article by Z. Gasanova, senior zinc plater of the Azerbaijan pipe rolling plant, Hero of Socialist Labor: "Towards New Success"]

[Excerpts] In December of this year the Azerbaijan pipe rolling plant imeni V. I. Lenin, the leader in ferrous metalurgy of the republic will be 30 years old. We, the veterans, have witnessed the glorious path that the collective of the enterprise has traversed during these years. You go through the shops and it seems that they are infinite, the plant is so spread out and expanded. Today the Azerbaijan pipe rolling plant is an open hearth furnace with six smelting furnaces, with blooming and pipe-preparing mill. In the international collective of the enterprise there are several thousand people.

The main product of the plant is pipe of oil grade. We also manufacture pipes for ship building, oil refineries and petrochemical industry, and machine construction. Our product is in great demand both in our country and abroad.

A lot of attention is focused on improving the technological processes, updating equipment, and mastering efficient types of pipe design. Thus, the open-hearth shop has introduced a number of new technological processes which improve the structure of the ingot, the rolling shop has replaced a considerable part of the equipment, introduced automated and semiautomated production lines for cutting pipes and couplings, two of them with numerical program control, and a new one has been started for production of drilling pipes. As a result of the joint efforts of the VNIITI [not futher identified] and the plant collective, a plan has been born for reconstruction of the pipe rolling unit 250-2, as a result of which for the first time in world practice high-temperature thermal treatment of pipes on the production line has been implemented. In the future, the plant will be able to supply tens of thousands of tons of high-quality, high-strength casings.

In a word, the changes have been good.

The pipe-rolling shop is the largest at our plant. There are 65 brigades working here. Among them is the brigade of Bayram Bekhbudov. It has finished the 10th Five-Year Plan in four years and six months. It has decided to complete the 11th Five-Year Plan in the same period. This is a rare case in

metallurgy, especially if you consider that the members of the brigade B. Bekhbudov are manufacturing pipes of oil grade which are difficult to fabricate. The plant collective, having started the intensive watch in honor of the 60th anniversary of formation of the USSR, decided to fulfill the annual assignment by 29 December, to manufacture above-plan products totalling R 600,000, to smelt above the plan 800,000 T of steel, and to provide finished rolled products for more than 1200 T.

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PIPELINES

PIPELINE EQUIPMENT PROVIDED BY ARMENIA

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Aug 82 p 3

/Article by N. Ordinyan, correspondent, Yerevan: "From Armenia to the Gas Pipelines of Siberia"/

/Text/ Mobile electric power stations and generators, compressors and transformer substations, gas welding and gas cutting equipment - it is not easy to enumerate all the types of machinery that is being manufactured by Armenian enterprises for the gas pipelines of Siberia. And, of course, the most important of these manufactured articles come from the republic's newest machine building enterprise - the Oktemberyanskoye experimental turbounit networks plant.

This plant specializes in the manufacture of articles for automated gas turbine assemblies and mobile compressor stations for mainline gas pipelines. It is this plant that produces devices for absorbing the noise created during the operation of the powerful compressor stations. This year the machine builders are completing preparations and will just begin to produce the "Sokol-2" unit for the monitoring and regulation of work modes of gas wells. These units will be delivered to Urengoy and to other gas fields within the Soviet Union.

At the same time the plant is working on three other new kinds of equipment for the GPU-10 gas pumping units.

A. Sarkisyan, a fitter from the plant's mechanical repair section and a delegate to the Armenian SSR's 27th Party Congress, reports, "the collective of our plant was the first in the republic to support the patriotic initiative of leading Soviet enterprises - to use our own resources to manufacture everything necessary for the Siberian gas pipelines using Soviet equipment and technology. At our party meeting we unanimously resolved to sharply increase output, to improve the quality of equipment for the gas pipelines, and to assimilate the production of new product by November, ahead of schedule."

The gas welding and gas cutting equipment that is manufactured at the Avtogenmash Kirovakanskiy plant is in great demand. It is being used in the construction of the Urengoy to Uzhgorod gas pipeline.

In view of this, the Kirovakanskiy machine builders decided to speed up the delivery to the Siberian construction projects of the "Orbita" and "Sputnik" machinery which are used to weld and cut large diameter pipes. They decided to give special emphasis to the "Orbita-2", which can cut pipes along a straight line and at any angle, which makes it possible to considerably reduce time periods for installing assemblies of the gas pipelines, which require elbows and outlets.

The pace of work at the plant is picking up. In July the machine builders forwarded ten "Sputnikov's" and "Orbita's" - three more than called for in the plan - for the construction of Siberian gas pipelines.

The collective of shop No. 3, where gas cutting machinery is manufactured, is working with special enthusiasm. Many lathe operators, fitters and assemblers, and electricians are consistently fulfilling their daily assignments by 120 to 130 percent.

S. Pogosyan, brigade leader of the fitters and assemblers of this shop, reports, "we are convinced that all Siberian gas pipelines will be in operation on schedule. We have decided to speed up by three months the fulfillment of orders for the Siberian construction projects."

While preparing this report, I received a telephone call at the correspondents' office for SOTSIALISTICHESKAYA INDUSTRIYA in Yerevan from Kirovakan. E. Bodzhikyan, the director of the Avtogenmash plant, informed me that Kirovakan had shipped another batch of "Sputnik's", "Orbita's", and "ASSh-70", which are used for mechanizing auxiliary work in the construction of gas pipelines, to the Urengoy to Uzhgorod pipeline project. The schedule of successful work is being sustained by the Kirovakan workers with honor.

Armenian gas pipeline workers came to the final sector of the transcontinental gas pipeline in Zakarpat'ye at the start of this year. They quickly threw up two well-appointed towns for 400 men and organized receiving points for cargoes at nearby railroad stations. They also built a welding and assembly base and established a communications system.

S. Kazinyan, the chief of the Zakavkazkoye pipeline construction administration, reports, "pipelaying work in the Carpathian Mountains is being done by two of our reinforced comprehensive flow-line brigades, which are staffed with builders in all specialized skills. They complete one kilometer every 24-hours. This indicator was achieved by the construction workers of the administration on the pipeline sections between Urengoy, Petrovsk and Novopskov."

From the ground clearing for the Bogorodchanskaya compressor station the technological flow-line operation headed by S. Gevorkyan began its path to the border of Czechoslovakia. From Uzhgorod comes the collective of the second flow-line operation headed by M. Gambar'yan. Before these two organizations meet they must overcome the mountain chain of the Carpathians with its steep cliffs and slopes and landslide sections.

The Armenian gas pipeline builders are picking up the pace of work. Twenty-seven kilometers of pipe have been welded into a strand. Some 15 kilometers of trench have been dug and 11 kilometers of the gas pipeline have been laid. But this is not the best that they can do. At a meeting in Ivano-Frankovsk the pipelayers announced their decision to complete by the 60th anniversary of the formation of the USSR the first 100 kilometers of the pipeline and to hand over the entire Carpathian section by the end of 1983, six months ahead of schedule.

For the successful fulfillment of the pledges that were made the gas pipeline builders of Armenia have joined the socialist competition on the "workers' relay race" with the collectives of the Production Association Prikarpattransgaz /Carpathian Mountains Gas Transport Association/.

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PIPELINES

BRIEFS

EARLY PIPE SHIPMENT--The Khartsyzk pipe plant has shipped pipes of large diameter to the builders of the export gas pipeline Urengoy-Uzhgorod ahead of schedule. Since the beginning of the year the plant has already shipped 500,000 T of pipes. The manufacure of products rose because of the mastery of the output of the new electrical welding shop. The Komsomols and young people of the city did alot of work to create it. In cooperation with the specialists of the Institute of Electric Arc Welding imeni Ye. O. Paton of the Ukrainian SSR Acadamy of Sciences, the Khartsyzk pipe rollers have introduced into the shop plasma cutting of metal and other technical innovations. [Article by V. Badov, our correspondent] [Text] [Moscow KOMSOMOL'SKAYA PRAVDA in Russian 10 Aug 82 p 1] 9035

PIPELINE ADVANCES--The installers, electric welders and builders from the Order of the Red Banner of Labor trust "Vostoknefteprovodstroy" are building the Urengoy-Novopskov gas pipeline at the Bashkir and Perm sections. Up to 1,000 m of pipes are welded every day at the Bashkir section in the region of the Moskovo settlement. The collectives from the trust "Vostoknefteprovodstroy" are competing for a worthy meeting of the 60th anniversary of the USSR. Ahead of the workers is important labor on the gas pipeline Urengoy-Pomary-Uzhgorod. [Text] [Moscow KOMSOMOL'SKAYA PRAVDA in Russian 10 Aug 82 p 1] 9035

EARLY COMPLETION OF COMPRESSOR STATION--Orenburg--Construction of the Sokovskiy compressor station on the gas pipeline Urengoy-Petrovsk has been completed considerably ahead of the standard schedule. Siberian gas has been sent to the new station. The installers from the trust "Yuzhuralelektromontazh" G. Golovachev, G. Prytkov and A. Antonov distinquished themselves at the construction of this important facility. High indicators in labor were also achieved by the collectives of the trust "Orenburggazstroy" and the brigade of A. Shishkov from the trust "Orskpromstroy." [Article by I. Payvin, our in-house correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Aug 82 p 1] 9035

GAS PUMPING UNIT--At the Novgorod gas compressor station, a 25-megawatt gas pumping unit has successfully passed testing. It was manufactured in the Leningrad production association "Nevskiy zavod" imeni V. I. Lenin. The purpose of these units is to supply natural gas of West Siberia to the Eurpean sector or the USSR on the system of gas pipelines with diameter 1420 mm under pressure 75-100 atmospheres. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 35,Aug 82 p 3] 9035

PUMPING STATION--Soon another pumping station will be added to the oil pipeline Surgut-Polotsk. It has been erected in the Yaroslav Oblast, at the settlement of Koromyslovo. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 35,Aug 82 p 3] 9035

PIPES LOST--The Tyumen Surgut is rich in ownerless metal scrap. Whole mountains of collected iron are rising, for example, on areas near schools. But "Vtorchermet" is not using them, and the signals of "Komsomol searchlights" do not help. Thirty-two pipes costing R 77,000 have been "neglected" in Zubakinskiy Yaru. They were "lost" during transporting by the trust "Priob'truboprovodstroy." A year ago the city committee of people's control entrusted the trust "Surguttruboprovodstroy" with putting the expensive pipes into order, but it is not hurrying to fulfill the order. [Article by A. Leonidov and A. Shevchuk] [Text] [Moscow EKONOMICHESKAYA GAZETA No 34, Aug 82 p 13] 9035

EXPORT PIPELINE--Workers from the Leningrad Machine Building Plant have completed an important assignment for manufacturing highly-productive insulating combines for the Urengoy-Pomary-Uzhgorod gas pipeline. They completed the job one month ahead of schedule. Yesterday they shipped the final batch of these universal assemblies to the pipeline construction site. The ahead-of-schedule shipment of the equipment to the gas pipeline path has become the norm for the Leningrad enterprises. The fast work here is based upon a solid foundation: the basis for this accomplishment has been the cooperation of more than ten enterprises and organizations. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 29 Aug 82 p 1/ 8927

FIRST SERIES-PRODUCED GTN-25--The assembly of the first series-produced GTN-25 unit, which are to be used in the Urengoy-Pomary-Uzhgorod gas pipeline construction, has gotten underway at the Leningrad Association Nevskiy Zavod imeni V. I. Lenin. The machine builders have undertaken the final work in creating the pumping unit well ahead of the planned schedule. The high pace of work was made possible by the cooperating plants, which are supplying the parts for the assembly. The unit will be manufactured ahead of schedule. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 3 Sep 82 p 2/ 8927

WELDING EQUIPMENT FOR PIPELINE--The Urengoy-Pomary-Uzhgorod pipeline builders have received the "Nora" x-ray devices ahead of schedule. These devices are manufactured by the Leningrad Burevestnik Association. They make it possible to quickly monitor the quality of welded seams. /Text/ /Moscow PRAVDA in Russian 1 Sep 82 p 2/ 8927

MORE ON WELDING EQUIPMENT--The welding base that was created by the experimental mechanical shop of Glavvostoktruboprodstroy /Main Administration for Pipeline Construction in the Eastern Regions/ decreases the amount of time required for pipeline welding by half. This equipment, having been subjected to successful testing, was today shipped to the builders of the Urengoy-Pomary-Uzhgorod gas pipeline. The new assembly provides for the semi-automatic welding of two seams at the same time. It accepts the pipes and lays the welded pipe-sections through the use of a special device. There is a cabin for the welders which is located between two seams on a system of rails. The entire base has a reliable covering, which makes it possible to do assembly work in any weather conditions. /Text/ /Moscow TRUD in Russian 6 Aug 82 p 1/ 8927

TESTING EQUIPMENT FOR EXPORT PIPELINE--Equipment developed and now in series production at the L'vov Mechanical Plant Remmekhgazprom will help to determine if the Urengoy-Pomary-Uzhgorod gas pipeline is ready to be operated. Today, a full month ahead of schedule, the Kuybyshev-truboprovod Trust received the first units for testing individual sections of the pipeline. In the shops of the enterprise other equipment is being manufactured for the builders of the gas mainline; the work is proceeding ahead of schedule. /Text/ /Kishinev SOVETSKAYA MOLDAVIYA in Russian 13 Aug 82 p 1/ 8927

DON PIPELINE--Tula--The order-bearing trust "Shchekingazstroy" has begun construction of the 53-kilometer section of the Urengoy-Uzhgorod gas pipeline along the boundary of the Tula and Lipetsk Oblasts. On the right bank of the Don, the first kilometers of pipes supplied here from the FRG were lying. They were joined by the brigades of experienced welders Ye. Mestoivanchenko, V. Proskurin and the Komsomol-youth collective under the supervision of I. Svirid. It is now a hot time at the construction site. The builders and installers are competing under the motto "a kilometer of route per day!" This schedule is being strictly fulfilled. [Article by Ye. Valov, outside IZVESTIYA correspondent] [Text] [Moscow IZVESTIYA in Russian 26 Aug 82 p 2] 9035

PIPELINE EXTENDS--Cheboksary--The segment of gas pipeline Urengoy-Pomary-Uzhgorod extends 130 kilometers on the territory of Chuvashiya. The builders have begun to lay the steel pipes on this section. The local relief here is very complicated, the route intersects deep ravines, rivers, railroad, and heavily traveled roads. But the builders are full of decisiveness to finish the first length ahead of schedule, by December. Acceleration of work has been helped by the creation of a single production line at the section. It is reported that the welders and installers, excavators and insulation workers, transportation workers and electricians are now working on the final result. The Chuvash section of the route has become a test site for the highly productive welding unit created in the Institute of Electric Arc Welding imeni Ye. O. Paton. This automatic unit practically excludes manual labor in welding butt joints on the 34-meter lengths of pipes. [Article by TASS correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA 27 Jul 82 p 1] 9035

PIPELINE ENTERS UKRAINE--On the route of the export gas pipeline Urengoy-Uzhgorod which has passed through the central regions of the Ukraine, dozens of kilometers of pipes have already been welded. The collectives of the special administration No 12 and the construction-insulation administration No 10 from the trust "Ukrtruboprovodstroy" only have to lay 117 kilometers of route. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 35, Aug 82 p 3] 9035

PIPELINE DOCUMENTS ISSUED--Kiev--"Soyuzgazproyekt" is the chief organization for planning main gas pipelines which are built on the basis of foreign economic agreements. The collective of planners has adopted a socialist commitment for early completion of work on the unique construction site of the export gas trunkline in response to the discriminatory measures of the U.S. administration. One of

the points of these commitments has been fulfilled: documents have been issued which guarantee timely distribution of the orders for equipment, fittings and construction parts for the compressor stations. Working drawings have also been issued for the construction of three parts of the route over 1000 kilometers long. [Article by Zh. Tkachenko, our in-house correspondent] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Aug 82 p 2] 9035

PIPELINING--Sverdlovsk--The collective of the chief plant of the production association "Uralmetallurgkonstruktsiya" is fulfilling all the orders for construction of the Urengoy-Uzhgorod gas pipeline ahead of schedule. It was planned to fabricate a thousand tons of pipelining for the compressor stations. The collective found the reserves and has been obliged to make 300 tons more. In order to reduce the time of installation on the gas compressor stations, the workers of the plant decided to do their own installation and to send the customer finished assemblies. The fitters are fulfilling additional work by using the reserves of improved labor productivity and condensing of the work shift. [Article by A. Mal'tsev, our in-house correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Aug 82 p 1] 9035

FASTER WELDING--Ufa--The welding base set up in the experimental mechanical workshop of the Glavbostoktruboprobodstroy has doubled the rate of welding pipelines. This equipment, passing successful tests, was sent yesterday to the builders of the Urengoy-Pomary-Uzhgorod gas pipeline. The new unit guarantees semiautomatic welding of two butt joints at once. Pipes are received and the welded lengths are laid by a special device. A cab has been provided for the welders which moves from butt joint to butt joint on rails. The entire base has a reliable covering which makes it possible to weld under any weather conditions. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Aug 82 p 1] 9035

GASOLINE PIPELINE--Tyumen--Construction has begun on the Tyumen land of yet another pipeline, for transporting unstable gasoline from West Siberia to Povolzhye. This valuable product of primary refining of casing-head gas is now being sent to the enterprises of the chemical industry from the Tobol petrochemical complex to the railroad in tank cars. The new line extending 1,800 kilometers will guarantee more economical and smooth supply of raw material to the plants of the Urals, the Bashkiriya and Povolzhye. The Tyumen segment of the route extends 173 kilometers and has been entrusted for laying to the collective SMU-30 of the trust "Tyumen'gazpromstroy." [Article by M. Sil'vanovich] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Aug 82 p 1] 9035

AUTOMATIC SWITCHES--Divnogorsk--The collective of the Divnogorsk plant of low-voltage apparatus shipped to the Tashkent production association "Sredazelektroapparat" a batch of automatic switches 2 months ahead of schedule. They are needed to complete the equipment supplied for construction of the Urengoy-Uzhgorod gas pipeline. The automatic switches in the series "A-3710" are complicated to make, and the demand for them is constantly rising. The fulfillment of the honorable order has been entrusted to the Komsomol-youth collective of installers headed by A. Shubarov. The Komsomols have coped with the set task with honor. [Article by S. Sadoshenko, our in-house correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 2 Aug 82 p 1] 9035

GAS PUMPING UNITS--Khabarovsk--Four gas pumping units have been sent ahead of schedule to the route of the Urengoy-Uzhgorod gas pipeline under construction from the local plant "Energomash." Having supported the initiative of the collectives of the subcontracting enterprises, the Khabarovsk machine builders have been obliged to fulfill the annual plan for shipping equipment to the important construction site of the country a month ahead of schedule. [Article by Yu. Balkanov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 22 Aug 82 p 1] 9035

SEVERNYY BALKUI GAS--Severnyy Balkui--The last lengths of pipes have been laid at the construction of the gas pipeline Severnyy Balkui-Naip. The blue fuel of the new field will flow on the underground artery to the chief structure of Naip, and from here to the transcontinental gas pipeline Central Asia-center of the country. North Balkui is the start-up object of this year. The unit of this comprehensive gas preparation is being installed, and engineering piping is being laid. The first group of operational wells has been drilled. Another gas-extracting field is being born which will yield up to 3 billion m^3 of natural gas per year. The start-up of the builders of the trust "Naipgazstroy" of the new facilities will help the field workers of "Achakgazdobycha" to maintain a stable level of extraction of energy and chemical raw material. [Article by A. Vinogradov] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 13 Aug 82 p 2] 9035

SECOND GAS COMPRESSOR STATION--Lipetsk--The general contractor SU-6 of the trust "Yeletstyazhstroy" has started construction of the second gas-compressor station No 29 "Donskoy" on the territory of the Lipetsk Oblast on the super-long distance route Urengoy-Uzhgorod. The honor of removing the first shovel of ground at the construction site was given to one of the best machine operators of the trust of "Spetsstory" A. Rostotskiy, and it was dumped by driver V. Ushakov. A labor competition has developed between the machine operators and the truck drivers. [Article by N. Klimov] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Aug 82 p 2] 9035

ACCELERATED PIPELINE CONSTRUCTION--The gas pipeline Urengoy-Pomary-Uzhgorod is being laid at accelerated rates on the section passing through the territory of Gorkov Oblast and Mordoviya. The drivers are intensively hauling 34-meter pipe lengths to the route. The work is being done by experienced specialists who have laying of the Ukhta-Torzhok, Nadym-Ukhta, and Urengoy-Novopskov gas pipelines behind them. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 36, Sep 82 p 3] 9035

PIPELINE LENGTHENS--The rates of construction of the gas pipelines increase everyday. Over 500 kilometers of pipeline have been laid. Hundreds of enterprises of the country are shipping domestic bulldozers and excavators, and welding automatic units to the pipeline ahead of schedule. The collective of the comprehensive production line from the trust "Kuybyshevtruboprovodstroy" is working on the section of the gas pipeline route which passes through Chubashiya. It is performing all types of line operations: excavation, insulation-laying, welding on the 127-kilometer section from the Volga to the Sura River. One kilometer today is the rate at which the pipe is moving to the west. [Text] [Moscow PRAVDA in Russian 24 Aug 82 p 1] 9035

PIPELINE REACHES UDMURT--Izhevsk--The first pipes have been welded on the Udmurt section of the Urengoy-Pomary-Uzhgorod gas pipeline. An important stage of work has been done on the more than 150-kilometer segment of the trunkline which intersects from east to west the autonomous republic and will pass through forest thickets, swamps and rivers. There will be serious water obstacles: the Kama and Vyatka. The direct arrival of the builders at the route was preceded by the start-up of a large welding base in the city of Mozhga, where pipes are welded into lengthy sections on special racks. Fifty kilometers of them have been welded at the base and half have been shipped to the route. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Aug 82 p 1] 9035

PIPE-CARRIERS--Baku--The Baku machine construction plant imeni V. I. Lenin of the association "Soyuzneftemash" is supplying pipe carriers for construction of the Siberian-West Europe pipeline. Since the beginning of the year, 33 units have been sent to Glavtyumengaz considerably ahead of schedule. The collective of the plant "Bakinskiy Rabochiy" has also sent a batch of special pipe length carriers for construction of the gas trunkline. Each of these machines can transport a column of pipes weighing 19 tons and 36 meters long under complicated climate conditions. Now the machine builders are preparing for the order of the builders of the gas pipeline new pipe length carriers whose power will be increased 1.5-fold. [Article by N. Zorin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 14 Aug 82 p 1] 9035

PIPELINE DELAY--Because of the warning signal in the newspaper of 6 June 1982 under the title "Pipes on Our Hands" Glavstroygazprovod reports that construction of the Irga-Vil'nyus gas pipeline (on the section Riga-Panevezhis) was started in 1977. The allocations for this construction were not assimilated annually by the contracting trust Lengazspetsstroy. Fulfillment of the construction-installation plan was: 1977 41 percent, 1978 45 percent, 1980 39 percent, and 1981 17 percent. There were no delays in the financing for the entire period of construction. This year financing has not been drawn up mainly because of the contractor who has refused to conclude the annual contract to obtain the reaffirmed summary estimate. Taking into consideration that the summary estimate is reaffirmed with an increase in cost which requires the agreement of the USSR Gosplan and the USSR Gosstroy, until this agreement is obtained the customer is not able to supply the trust with the indicated estimate. However, according to the existing situation, when the limit is up for individual objects of the summary estimate, the customer has the right to finance the construction site for 3 months within the general estimated limit by permission of the ministry. This permission has been given to the Minsk board of gas pipelines under construction by the Ministry of the Gas Industry. After signing by the contractor of the annual contract, financing of the construction site will be found by the customer. [Article by E. Ivanova, deputy head of Glavstroygazoprovod] [Text] [Moscow STROYTEL'NAYA GAZETA in Russian 16 Jul 82 p 2] 9035

WORK ON NORTHERN SECTION OF EXPORT PIPELINE--The final working blueprints for the northern and most complicated section of the Urengoy-Pomary-Uzhgorod gas pipeline have been given to the builders ahead of schedule by the workers of the Leningrad Giprospetsgaz Institute. They were able to significantly establish normative time periods through the use of overhead photography, which made it possible to select the most convenient corridor for laying the pipeline. /Text/ Kishinev SOVETSKAYA MOLDAVIA in Russian 13 Aug 82 p 1] 8927

UNDERGROUND EQUIPMENT--The construction of a collector for the water from heavy rains at a depth of six meters, which will pass through the Khar'kov Park imeni Artem, is well underway. But there are no traces of the work to be seen - no ditches nor any damaged trees. A brigade of the specialized construction administration No 1 of the Khar'kov-spetsstroymekhanizatsiya Trust /Khar'kov special mechanized construction trust/ is performing the work using an underground machine for the ditchless laying of a pipeline. The pipelaying is controlled by remote control from a cabin located on the surface. The manufacture of such steel "moles" was developed at the Khar'kov Mechanized-Repair Plant of Glavpromstroymekhanizatsiya. These machines are capable of doing horizontal drilling and of pulling pipe with various diameters behind it. The pipe can range from 800 to 1,600 mm in diameter. This year such steel "moles" will be available to the builders of mainline gas pipelines. /Text/ /Moscow IZVESTIYA in Russian 19 Jul 82 p 2/ 8927

CROSSING THE KAMA RIVER--It seems that it was only recently that the Leningrad Specialized Administration for Underground-Technical Work came to the shore of the Kama River; and already the first strand of the underwater crossing - 650 meters of pipeline - rests along the shore. Tests have demonstrated the excellent quality of the work. This is a tribute to the brigade of I. Usenko, which received experience while working on the Northern Lights pipeline. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Aug 82 p 1/ 8927

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LATVIAN SSR HEAT AND FUEL SUPPLY PROBLEMS DISCUSSED

Riga IZVESTIYA AKADEMII NAUK LATVIYSKOY SSR in Russian No 5, 1982 pp 72-76

[Article by V. A. Zebergs and A. Ya. Lazdin'sh, Physical-Energy Institute of the Latvian SSR Academy of Sciences, Latvian SSR Gosplan: "Problems of the Further Development of Heat and Fuel Supply for the Latvian SSR"]

[Text] In order to improve control over the development and functioning of the fuel and engery complex (TEK) of the republic in the next 5-10 years, a special target comprehensive program has been developed for an improved method of control of power engineering. It stipulates a comprehensive solution to measures for research and planning work, as well as realization of these plans, construction of power engineering facilities and their optimal operation. The process of controlling the power engineering complex, in the same way as the actual development of the power engineering complex, is lengthy and continuous: starting from long-term forecasts and long-term plans to five-year plans, plans and developments of specific power engineering projects, their construction and operation of the existing power engineering units based on current plans (see table). At each of the stages of this process of control, there are problems which require scientific research and organizational measures. Primary attention in the target comprehensive program for the development of the republic's TEK is focused on the development and functioning of the system of heat supply and supply of boiler-furnace fuel. Great time lag is observed in the development of these systems, while the specific weight of consumption of fuel and energy resources in the total fuel and energy balance of the republic is high. Special requirements for improving the system of controlling the development of power engineering are made because in the last 10-15 years there has been a significant change in the structure of boiler-furnace fuel with broad introduction of petroleum fuel and natural gas. The development of gasification in the future will be expanded, however the rise in consumption in petroleum products as boiler-furnace fuel will be restrained. Nuclear heat supply plants and electric heat will acquire greater importance in the distant future for heat supply. Conservation of fuel and heat is one of the most important tasks indicated by the CPSU 26th Congress. It is known that the existing technology of industry both in our country and in all the industrially developed countries is fairly energy-intensive, however re-equipping of industrial enterprises and the switching to energy-conserving technology is a lengthy and complicated process. Re-equipping of industry is limited not only by capital investments, but also by the potentialities of the machine construction sector. In the next 5-10 years, by improving technology only

about 10 percent of the required conservation of fuel and energy resources can be guaranteed. Therefore in the subprogram for conservation of fuel of the target comprehensive program for development of TEK of the republic, primary attention is focused on improving the traditional task of conservation: standardization, calculation and accounting of consumption of fuel and energy resources, elimination of their losses, as well as organizational and technical measures to improve the heat power engineering units which do not require large capital investments in material resources. Under these conditions it is necessary to count on a significant enlargement, and in certain cases, an increase in the number of existing power engineering services in industry and agriculture, as well as the creation of new services.

System of Controlling Development and Functioning of Heat and Fuel Supply

Temporal Level of Control	Processes of Control
1. Forecasting and long-term planning	a. Selection of energy carriers and development of systems of heat and fuel supply b. Development of new types of heat and energy units c. Long-term planning of heat and fuel supply
2. Short-term and current planning (five-year and annual planning)	a. Five-year and annual planning of heat and fuel supply b. Planning of construction of facilities for heat and fuel supply c. Working planning for units of heat and fuel supply
3. Realization of annual plans of heat and fuel supply (control of operation of existing heat power engineering units)	a. Operational standardization of heat and fuel consumption b. Measures for conservation of heat and fuel c. Measures for improving heat power engineering units

In this case it is necessary to take into consideration the dynamics of development of these organizations both in respect to the tasks to be solved, and their number. In the initial period of development of new methods for improving the operation of heat units, the power engineering services will have limmited tasks with a large number of personnel. As the tasks are mastered and qualification and productivity improve, the volume and number of tasks will be increased with the same number of specialists.

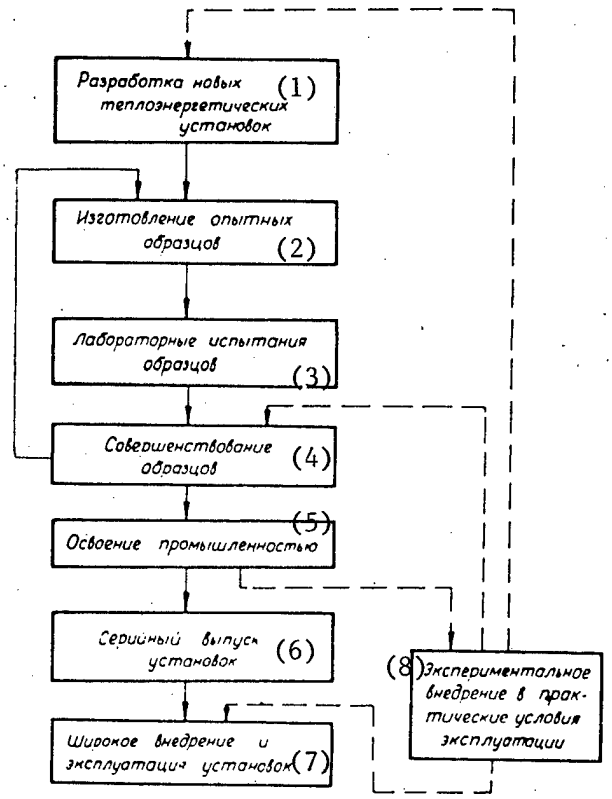
A timely measure under these conditions was the creation in the republic of the association "Latviyas Siltums," whose main task is to improve operation of a large number of small boiler houses.

Improvement in the technique of standardization, calculation and accounting stipulates a deeper analysis of the losses of heat and fuel and the possibility of using secondary energy resources with different energy potential. However, even now with the existing level of calculation of the energy indicators, there are serious claims against the quality of fulfillment of the statistical accounting for heat power engineering industrial enterprises. Consequently, it is necessary not only to introduce units of modern measurements and control apparatus, but also to significantly improve the qualifications of the specialists of the power engineering services and to somewhat increase their number. Under these conditions it may prove expedient to examine the question of creating organizations to operate industrial power engineering units or to create an industrial sector in the association "Latviyas Siltums."

Especial difficulties in introduction of improved methods of standardization, calculation and accounting of the consumption of energy resources developed in agriculture. Here it is necessary to take into consideration the especilly lengthy period for improving the skill of the power engineer of rural enterprises. At the same time, as a rule, the agricultural specialists still do not understand the value of improving energy supply as an important lever for enhancing productivity of the agricultural production and the quality of the products. Currently the level of heat supply of agriculture is still low. Many farms do not have heating-ventilation units and do not observe the required microclimate. The process of conservation of heat and fuel must occur simultaneously in agriculture where they are not sufficiently efficiently used, and additional heat should be supplied to the farms and other facilities of agricultural production where this is needed. Under these conditions with a slight growth in the total consumption of fuel one can obtain a considerable growth in output of agricultural products. The operation of experimental industrial associations in Talsinskiy and Valmiyerskiy Rayons did not yield the necessary results in this respect, since these regions lacked the appropriate energy services. Bearing in mind the importance of the problem and the especially complicated conditions for improving the power engineering industry in agricultural enterprises, it is necessary that in the agricultural-industrial associations the energy shop jointly with the association "Sel'energo" set up in the system of the production association "Goskomsel'khoztekhnika" begin to be involved in these questions. Calculation of the standard of heat and fuel consumption and systematic verification of their fulfillment, as well as instrument verification of the quality of operation of the boiler houses (a minimum of once a year) should be guaranteed primarily in the farms. It may prove expedient to entrust servicing of the large rural boiler houses in the future to the association "Latviyas Siltums."

One should note the important role of the extensive use of a practical experiment, which as a new and important stage not only in the development and introduction of new apparatus and equipment of heat and fuel supply and the use of fuel and energy resources, but also with the introduction of organizational measures to improve operation of power engineering heat units,

was given a lot of attention in the developed target comprehensive program for the TEK of the republic. The process of developing the new equipment is shown schematically in the figure.



Plan for Movement of Main Information in a Territorial System of Controlling Heat Supply

Key:

1. Development of new heat power engineering units
2. Fabrication of experimental samples
3. Laboritory testing of samples
4. Improvement in samples
5. Development by industry
6. Series manufacture of units
7. Broad introduction and operation of units
8. Experimental introduction under practical conditions of operation

In the target comprehensive program development of new plans of heat supply in industry and agriculture is provided with the broad use of secondary energy resources and natural heat which mainly will be employed in the distant future (beyond the 12th Five-Year Plan). However even now there are a number of heat engineering units and apparatus whose introduction could yield a great economic effect, but there is no practical experiment of their operation.

These apparatus primarily include the resources for automating centralized systems of heat supply. In the Latvian SSR Academy of Sciences Physical-Energy Institute a gamut of thermal regulators has been developed for houses which are supplied from a centralized system of heat supply which could save from 20 to 30 percent of the heat. Thermal regulators have also been developed by other organizations. It is necessary to create in the republic cities experimental apartments with completely automated systems of centralized heat supply. This will make it possible to determine the volume of operation and the tasks for comprehensive operation of automated heat supply, since no automatic equipment can operate normally without its regular checking and adjustment.

The problem with organizing a practical experiment of operation refers to the same measure to automation of decentralized systems of heat supply. Automated burners have been developed and are produced in our country for small boiler houses on liquid fuel. However, in the majority of cases the automatic equipment does not operate because of the lack of its high-quality operation and regular checking.

Therefore an improvement in the structure of boiler-furnace fuel and supply of highly effective distillate petroleum fuel of many thousands of small boiler houses, mainly in the rural regions, does not yield the expected effect. When there are no automatic systems, the boilers operate with reduced efficiency, overconsumed fuel, as well as labor resources for servicing the boilers. Under these conditions an urgent measure is organization of experimental reference boilers and entire regions with completely automated boilers where the volume of tasks and work for high-quality operation of the automatic systems can be checked. This is expedient in the rural regions on the basis of experimental energy shops in the agricultural-industrial associations, since high-quality work of the automated burners not only yields conservation of fuel, but also makes it possible to reduce other outlays, as well as the number of service personnel of the boilers for use in the creation of services to maintain the automatic equipment in energy shops of the associations. This experiment will make it possible to determine the necessary fund of spare parts and replaceable automatic units.

With the broad construction of nuclear power plants, the use of electric heat becomes urgent, especially in agriculture and the communal-general sector of rural populated areas and cities in regions of decentralized heat supply. In contrast to industry under conditions where the consumers are less organized, practical development of electrical heat will have a longer period. In the cities of the republic electric hotplates of domestic production are already being used. Domestic industry also produces storage-battery electric heaters for productions needs and apartments. The installation of these electric heaters in apartments of the rural areas will be expedient together with electric hotplates. However there is no practical experience of using electric heaters and electric hotplates in the rural regions of the republic. It is therefore necessary in the near future to plan the organization of industrial highly electrified farms with the extensive use of electric heat. It is necessary at night to guarantee operation of storage battery electric heater of reduced loads on the electrical system. This is also associated with the introduction of definite automatic equipment (there are several systems) and the corresponding rates for electricity.

The reduced rate (1 kop/kW x h) for electricity in agricultural production does not stimulate the use at night of storage battery electric units of reduced loads on the electricity system. Even now the farms and other production facilities have a large number of electric heaters which generally are used on the free rate. This is explained by the fact that often thermal regulators are not operating (because of the lack of high-quality maintenance and regular checking of the automatic equipment), and they cannot be used without the presence of service personnel. But not only the consumer, but also the electrical-supplying organization should be interested in regulating the schedule for operation of these heat units (with installation of the appropriate network automatic equipment). Even if there is no special reduced night schedule, when the existing fleet of electricity-storage water heaters is used at night, the electricity-supplying organization could significantly reduce outlays for electricity supply to the rural regions and decrease the subsidies to the consumers with a rate of 1 kop/kW x h through other consumers. Therefore the appropriate network regions of the energy supplying organization of experimental highly electrified farms.

Realization of measures which are stipulated by the target comprehensive program for development of the republic TEK and improvement in control over its development and functioning by extensive use of a practical experiment is a new and complicated task. Not only experimental verification is stipulated under conditions of practical operation of the new production units, but the most important is experimental verification of the organization of high-quality operation of heat power engineering units and their automatic equipment on a regional scale(in the rural locality) and apartments (in cities). The organization of such extensive practical experiments is only possible under conditions of a comprehensive program in which all the appropriate departments and enterprises of the republic participate. There is no doubt that such measures conducted on broad scales in the Latvian SSR are of interest for other regions of the country. This can help the planning agencies of the country to conduct experimental organization of energy supply in the republic as an experimental economic region. However, the conducting of these measures advances additional tasks of the theoretical and applied nature before the scientific and planning organizations of the republic. In order to realize the method conclusions developed by these organizations, significant improvement is required in the qualification of the corresponding services of the energy supplying organizations and the organizations operating the heat power engineering units, and in individual cases, a certain increase in their number. The latter, mainly will have a tempory nature, although the increase in number of individual energy services will be justified by the achievement of the necessary saving of fuel and energy resources. This is especially important in the near futrue when, as noted above, there is no possibility of rapidly and in broad scales introducing energy-conserving technology in industry and other sectors of the national economy.

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