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PARTY'S ROLE IN IMPROVING AZERBAIJAN PETROLEUM MACHINEBUILDERS OUTPUT TOLD

Baku BAKINSKIY RABOCHIY in Russian 29 Dec 82 p 2

[Article by L. Bessarabov: "Not a Matter of Trifles"]

> [Text] Azerbaijan's oilfield workers are to solve in the near future new and complicated tasks aimed at a single purpose--to increase oil recovery, especially offshore. It is known that today they are working in conditions that have become more complicated. They have to penetrate to greater depths and to go farther out to sea. These factors require new technical and organizational solutions. And, undoubtedly, the machinebuilders--those who produce the equipment for penetrating the earth and for withdrawing fuel from formations--should be the oilfield workers' first assistants. Communists of the Machinebuilding Plant imeni V. I. Lenin are seeking paths to the successful realization of important tasks in this area.

"For the third year, the heart of the five-year plan," said the plant's party bureau secretary, M. Soyuk, at the start of our conversation, "high goals have been set for the enterprise's collective. The decisions of the 26th CPSU Congress, the November 1982 CPSU Central Committee Plenum and the 7th Session of the USSR Supreme Soviet are directing us in raising production effectiveness in every possible way. And it is the communists' duty to thoroughly analyze their work and the experience gained and to outline the path for further improvement of the job."

For many years now the collective of the Plant imeni V. I. Lenin has had a good record in Soyuzneftemash [All-Union Association for Petroleum Machinebuilding]. And the current work of the machinebuilders is marked by high indicators. Output has been realized above the plan by many thousand rubles. This has greatly exceeded the socialist commitments adopted by the collective. Goals for the production of oilfield equipment, output with the state Emblem of Quality, labor productivity growth and some other indicators have been exceeded.

The enterprise's party organization is boldly raising questions that are of vital importance for the plant and is consistently finding solutions to them. Communists R. Guseyn-zade, M. Kulik, A. Chernyayev, E. Ayvazyan, Yu. Elin, A. Yermolayev and others have become pioneers of valuable initiatives. In brief, there is something for the collective to be proud of. But there is also something to be thinking about.

It was emphasized at the November 1982 CPSU Central Committee Plenum that, for a number of the most important indicators, plan tasks for the first 2 years of the five-year plan remain unfulfilled. This relates most directly to the Plant imeni V. I. Lenin. For a long time now the collective has not been coping with the plan for the products mix. And primarily with the plan for producing gear-transmission assemblies and spare parts for oilfield equipment. For this affects oil recovery work appreciably.

In the opinion of the plant's communists, the causes of these failures should be sought primarily in the fact that an attitude that the output of gear-transmission assemblies and spare parts is some kind of third priority work has prevailed at the plant. Department No 1 has not been fulfilling the plan for spare parts, and department No 2, moreover, has not been coping with the production of gear-transmission assemblies.

The party organizations of department No 1, where the secretary is V. Akopdzhanov, and department No 2--A. Lazarev supervises it--held discussions on these topics within their collectives. The communists noted that the named deficiencies are directly associated with the levels of labor and production discipline and with manifestations of wastefulness.

Here is one of them. A large amount of completely acceptable planetary and pinion gears were thrown in the waste. And how did the communists in the departments react to what had happened? Why, not at all. This case was not even discussed. The guilty were punished only a long time afterwards, after intervention by the plant's party bureau. And although this matter is comparatively ancient, it is still too early to consign it to the archives.

The November CPSU Central Committee Plenum again emphasized that major and important tasks can be solved only with the active participation of each worker, each toiler. For this purpose, major organizational work by party organizations is necessary. The communists should be in charge of the drive to carry out what has been planned, and each party member should rise to the occasion, to the requirements posed today.

And how are matters going in this regard at the Plant imeni V. I. Lenin? At a report and election meeting, for example, the distributor of work of Department No 1, G. Khait, took note of the fact that the plant's communists did not always by far penetrate into many important problems and show adherence to principle in solving them. Thus, this year nine men became communists, and seven were accepted for candidate membership in the CPSU. The augmentation was not so great. But there was a case where a person who was inadequately prepared was accepted for candidate membership. Time, of course, will tell whether he manages to overcome his deficiencies. But it is evident that a decision had been made in haste.

A communist is primarily an educator. That's exactly the approach that head of department No 2 Ye. Levit, boilermakers' brigade leader Yu. Yelin, lathe operator M. Mamedov and many others take to their responsibilities on resuming work after a break. They never let deficiencies get by, and they mandatorily seek to eliminate them. But there are at the plant, unfortunately, also those who take their obligations half-heartedly: "I, myself," he says, "work well, so what else is necessary?" He lacks exactingness. Cases are known where supervisors of departments and sections throw all their efforts into "rescuing" those who are at fault, motivated by the

fact that they are "good workers." And they, in turn, respond to such "concern" with new violations of labor and production discipline.

The plant's party bureau and the departments' party organizations do not always, unfortunately, concern themselves with violations. Why, it is rare that they listen to the reports of communists on the fulfillment of their statutory obligations, not to mention reports of nonparty supervisors of the middle echelon. And this is indeed a tested means for self-critical analysis and the discovery of deficiencies, which, as they say, are not always obvious. And the case of one of the plant's foremen is more than adequate confirmation of it.

The person referred to was called upon by the nature of his activity to be a model of discipline, but he himself crudely violated it. The party bureau looked attentively into what had happened. The guilty one was punished and transferred as a worker to a department for 3 months. This took effect. The man found the strength withim himself to analyze critically what had happened. Right now he is a foreman in another section. And he has changed sharply his attitude toward his obligations.

These days the party bureau is planning to hear the reports of the supervisors of department No 3. The discussion is to be earnest. The collective is one of the leaders, emerging the winner four times in this year's plantwide socialist competition. But at the same time it has several times let down other departments, for which it manufactures components and parts. It is clear that the one simply is not connected with the other. Apparently it is time to examine with full attention the existing terms for socialist competition and the efficacy of moral and material incentives.

Much was said at the November CPSU Central Committee Plenum about work with personnel. And it is not accidental that the communists of the mechanical-repair section have focused their attention on it. Many problems had accumulated here that went far beyond the framework of the departments where they work. The plant now has at its disposal some rather good equipment, it has numerically programed machine tools. But here is the trouble: there are not enough servicing personnel. The enterprise is experiencing especially a shortage of lathe operators. Output for outside orders is seen at the plant. But it would be much better and much more suitable if they were as concerned about their own personnel. It is necessary to pay more attention to training youths, to keeping them at the enterprise and to educating them. And the plant's council of mentors, which was augmented recently by the best production workers, could do much here.

The party bureau considers, not without foundation, that the work must be aimed more specifically, that the supervision of Komsomol organizations must be improved. This is a realistic basis for reducing personnel turnover among youths.

In light of the November 1982 CPSU Central Committee Plenum decisions, the plant's communists are planning concrete ways for improving exactingness toward each party member and for indoctrinating all workers in responsibility for the job assigned to them, for creating a healthy moral climate in the collective, and for intensifying the party's influence on all sections. The enterprise's party organizations see it as their task to overcome existing deficiencies, to mobilize the collective for successful fulfillment of the plan for all indicators, and thereby to create a firm basis for successful work in the third, core year of the five-year plan.

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OIL AND GAS

VOLGOGRAD MACHINEBUILDERS MAKE LIGHTER-WEIGHT ITEMS FOR OIL, GAS DRILLERS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Jan 83 p 1

[Article by A. Mikhaylovskiy (Volgograd): "The Designer Finds Reserves"]

[Text] On the very eve of 1983, joyful news came to the Volgograd Drilling Machinery Plant. The state Emblem of Quality had been awarded to the BU-2500-EU, by means of which the country drills many thousands of wells.

Design engineer V. Batrakov had just returned from a trip to Nizhnevartovsk, where he took part in a sponsorship erection of Volgograd drill rigs. Such trips and encounters with the celebrated West Siberian penetrators of the underground allow one to see one's own product, at times from an unexpected viewpoint. So now he has not arrived emptyhanded: there had been an idea about more rational placement of the equipment on the drill rig that promised a reduction in metals intensiveness and labor expenditure.

After listening attentively to Viktor Alekseyevich's arguments, the configuration experts agreed with him. The more so because he convinced them not only with words. Using his skill as a former mockupmaker, V. Batrakov often resorted to such a visual argument as a three-dimensional model of drilling equipment. And the improvement will prove itself now.

And now, on this occasion, the mockup demonstrated embodiment of the motto of the Volgograd designers: a continuous increase in the reliability and production potential of the drill rigs and a reduction of their materials intensiveness. These requirements are closely and mutually related.

The Volgograders, in achieving a saving of metal in accordance with the example of Odessa's NPO Kislorodmash [Science and Production Association for Oxygen Machinebuilding] collective, had traveled the path of a radical reexamination of solutions that had become fixed and customary. It is known, for example, that worker safety is a center of concern on drill rigs. But safe working conditions are at times created through additional expenditure of metal. But is that approach alone mandatory?

Here, let's say, the existing designs call for the traditional heavy stairways with railings, by means of which the derrickmen get to their workplace. Is it impossible to do without them? They considered and it turned out that it was possible. Let a light, reliable elevator deliver the person to his work site. It is simpler and it is more convenient.

There are also other ideas. The collective's socialist commitments for mastering the output of drill rigs that operate on direct current is quite promising. This does not cause special bother: compact and convenient thyristor converters that enable current from an LEP [power transmission line] or a diesel generator to be rectified have long been known. But are they advantageous?

"Direct current," comments the Metal-Structure Design Bureau chief, A. Krishchenko, "enables planned speed regulation for both the hoist and the rotor, as well as for the slush pumps, to be provided for. At the same time, the weight of the basic mechanisms and their drives will be about 60 tons lighter."

Experimental models of rigs intended for cluster drilling are now undergoing industrial tests. The first such rig that the Volgograders fabricated has already drilled several holes close to Megion, which is in Tyumen Oblast. Data about its operation will be used in preparing for the series production of cluster drill rigs.

The designers' schemes are implemented in the departments. A. Morozov, the leader of an integrated brigade, brings us to a machine tool on which an outsized part is being machined.

"This is an innovation that is priceless," he says. "A steel casting made of three parts, on the machining of which much time is spent, has been replaced by a one-piece casting made of superstrength iron. The bulk of the intermediate operations has been dispensed with."

The brigade leader pointed to a new type of hydraulic valve box for the slush pumps. Previously a ductile blank was used for making it, and much metal went into chips. At the suggestion of design engineers Yu. Vanin, V. Kryukov and others, steel slabs began to be used instead of the ductile parts. Waste was sharply cut.

What does tireless creative searching yield for the collective? First, the work's labor intensiveness is constantly being reduced. During the first year of the five-year plan it was reduced by 25 percent, enabling more than 220 workers to be released. In 1982 labor intensiveness in the manufacture of drill rigs was cut by another 8 percent. Second, estimated metal consumption per drill rig was reduced by 50 tons. And by the end of the five-year plan the Volgograders will "thin out" the drill rigs appreciably more.

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OIL EXPLORATION ON APSHERON PENINSULA LAGS

Baku VYSHKA in Russian 29 Dec 82 p 2

[Article by O. Nechipurenko: "Things Haven't Budged Even a Bit"]

> [Text] At the start of the year an article by a surprise-inspection brigade entitled, "Reserves in the Apsheron's Ground," was published in our paper under the standing head, "VYSHKA at Petroleum Exploration Sites." Let us recall that the article referred to the fact that, in accordance with a USSR Ministry of Petroleum Industry order, penetrations should have been made last year at prospecting holes in the Kala and Gousany areas for the purpose of exploring promising Oligocene-Miocene sediments on the Apsheron Peninsula. However, their erection did not start then. Work at still another hole which was aimed at the same sediments--No 3400 at Bukhta Il'icha--came to a standstill. In brief, the exploratory meterage drilled was zero at the end of the first quarter for the Apsheron UBR [Drilling Administration].

At the end of the year we decided to find out whether the situation had changed for the better. Not by much, it turned out. Instead of five exploratory holes, four of which should have been erected at Lok-Batan, drilling had started on only one--at Kala. All the UBR's exploratory penetration--2,188 meters versus the task of 6,060 meters for the first 11 months--came from it. We were told at the UBR that the brigade of foreman Azhdar Bagirov was drilling this hole--No 1490--2 months ahead of schedule. However, it was explained locally that matters here were not as good as had been presented by the administration's supervisors. The brigade reached a depth of 2,188 meters 2 months ago, but now, because of a narrowing of the bore, the hole cannot in any way be brought down to the face. The hole had practically been redrilled, although the foreman and the UBR's chief operating engineer A. Askerov tried in every possible way to conceal this fact.

Unfortunately, chief of the drilling operations section of Azneft' [Azerbaijan Oil Industry Association] Kh. Mirzoyev, had traveled the same path.

"The Kala area should not be complicated in the upper interval of the log," he said. "But what is going on right now at this hole is a puzzle to me, too."

Meanwhile, everything is explained fairly simply. The hole, the penetration of which was started 2 months ahead of the schedule, had been drilled not with the bits specified by the design but with those that the brigade had at hand. This,

naturally, led to defective work later. This was done in violation of the pertinent order of Minnefteprom [Ministry of Petroleum Industry], which forebade that drilling of deep exploratory holes be started until they had been provided with the required tools and equipment.

Also deplorable was the picture we saw at drill site No 3400 at Bibi-Eybat. Let us recall that a set of special equipment should have been erected for experimental penetration by means of a lime and bitumen mud (IBR). Originally this was to have been done in March, but then the date was moved ahead to December. Before this, the well had been mothballed. But even after 1 December, when the mothballing had expired, as before, there was not a soul here.

True, M. Veliyev, manager of Azneftestroy [Azerbaijan Petroleum-Industry Construction Trust], to which the building of this drill rig had been entrusted, assured us that in the very near future all measures would be taken to speed up the pace. I would like to believe that the date newly established for starting to drill hole No 3400--January of next year--will be met.

Great hopes are linked up with the start of the third year of the five-year plan, during which the Apsheron drillers are to drill more than 100,000 meters of hole, including about 8,000 meters for exploration. Six new drill rigs and other equipment are to be received, through funds allocated by the ministry. But the new year's work will be successful only if a firm base for it is laid now. Yet the UBR does not by far have all the prerequisites. It is planned to begin the drilling of prospecting and exploration hole No 1850 in the Gousany area in January, and a Ural-mash-4E rig has already been delivered to the drilling site. It would seem that the derrick-erecting work must be boosted in every possible way. However, even here, we have seen only a caretaker.

"The derrick-erectors' brigade left on Wednesday and they will not arrive before Monday," he said, "according to their schedule."

Powerful machinery stands idle at the facility, while there is a whole wealth of work to do: it is necessary to erect the drilling derrick, install large equipment on the footings and connect them together, and to do many other things. Moreover, the equipment, as was explained, still has not been completely delivered: there is no pump or unit for preparing muds, and so on. But it is indeed possible to meet the deadline if the business is undertaken energetically, without losing time in vacillation.

The solution of the task the 26th CPSU Congress set for Azerbaijan's oilfield workers--to build up reserves of oil and gas in order to stabilize the recovery thereof--is impossible without a radical improvement in drilling work indicators.

It was noted at the November 1982 CPSU Central Committee Plenum that we have great reserves in the national economy at our disposal. Among them are the introduction of advanced equipment and technology and the rational use of material and labor resources. This is quite evident in the example of the Apsheron Drilling Administration. For its collective, which previously drilled no more than 25,000-30,000 meters of hole per year, was able recently to practically more than double its annual penetration without replacing its equipment. And still, as the facts indicate, great reserves for increasing drilling speed here still are not being used completely by far.

It is a matter of honor for the Apsheron UBR collective to undertake during the five-year plan's third year the planned 100,000-meter hole-penetration goal at the Apsheron's fields, to make their contribution in the matter of stabilizing and increasing the republic's oil and gas recovery. Guided by the decisions of the November CPSU Central Committee Plenum and the December Communist Party of Azerbaijan Central Committee Plenum, the penetrators of the underground are obligated to mobilize all their forces in order to achieve this goal.

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OIL AND GAS

PROGRESS, PROSPECTS FOR SUPERDEEP DRILLING, OTHER GEOPHYSICAL WORK SURVEYED

Moscow EKONOMICHESKAYA GAZETA in Russian No 5, Jan 83 p 2

[Survey by the Mineral Resources Section of the USSR State Committee on Science and Technology: "To Get at Nature's Underground Secrets"]

[Text] The development of industry depends greatly upon the availability of explored mineral raw-material resources. However, in the modern era, the discovery of and exploration for fields of most types of useful minerals is becoming increasingly expensive. This is explained by the depletion of the reserve of large discoveries in existing mining-industry regions, by an objective reduction in the quality of the raw materials in the ground, and by the necessity to develop the northern and eastern regions of the USSR, the shelf zones, and deeper horizons of the earth's crust.

Only scientific and technical progress can counteract the increased material and financial expenditures for finding and exploring mineral raw-material fields. We are referring here primarily to basic and applied research of the earth's crust and the upper mantle, including study of the processes of the forming and the consistency in location of fields of useful minerals, and the conduct of integrated research of the earth's depths on the basis of geophysical work, remote methods and superdeep drilling, which will enable the choice of optimal directions for geological exploration to be substantiated. Second, a rise in the level of technical equipping of geological exploration and an improvement of organizational forms and of technological and methodological measures for performing exploration are being provided for.

Deep Exploration

It is necessary for this purpose to develop more rapidly progressive types of geophysical and geochemical research of the earth's depths, to use widely in geology the potential of high-altitude aeronautical and space facilities for studying the earth's natural resources, to use actively methods for accelerating the geological and economic assessment of useful-mineral fields, to arm geological exploration organizations further with technical resources and to supply them with highly effective equipment, apparatus and transport.

"Make an integrated study of the deep structure of the earth's crust by means of deep and superdeep wells and by geological and geophysical methods, and determine the prospects for the presence of oil, gas and ore in the country's main regions"--

this is how one of the most important scientific and technical programs to be realized during the 11th Five-Year Plan has been formulated.

The prime organization responsible for fulfilling the program is the USSR Ministry of Geology. Among the participants are organizations of the USSR and Union-republic Academies of Sciences, Minnefteprom [Ministry of Petroleum Industry], Mingazprom [Ministry of Gas Industry], USSR Minvuz [Ministry of Higher and Secondary Specialized Education], Mintyazhmash [Ministry of Heavy and Transport Machine Building] and Minkhimmash [Ministry of Chemical and Petroleum Machine Building]--about 150 scientific-research and production collectives.

Regional geological and geophysical research for creating standard models of the tectonosphere of regions with geodynamic settings for the main petroliferous and ore-bearing regions is an important chapter of this program. The drilling of 11 deep and superdeep wells is called for. In unison with geophysical research, they will permit, along with execution of the basic tasks, the solution of a number of practical problems of evaluating the prospects for the presence of oil, gas and ore in the country's regions of main geological interest..

Drilling of the Kola and Saatly superdeep wells continues. Drilling of Tyumen, Anastas'yevka-Troitskoye and Ural holes 8-12 kilometers deep has started. Preparatory work is being done on six more holes. Of them, the Dnepr-Donetsk, Caspian and Timan are aimed at studying the petroliferousness of the deep layers of the given regions, and the Muruntay, Norilsk and Krivoy Rog holes will help in the further study of ore-bearing systems, development of the theory of ore formation, and improvement of methods for deep prognoses and evaluation of fields of useful ore minerals.

The program includes the creation of new and the improvement of existing technical resources for drilling and for geological-geophysical study of deep and superdeep holes. Thus, test models must be developed and series output arranged for high-strength drill pipe made of light alloys, high-strength rock-breaking drilling tools core-sampling devices, heat-resistant geared turbodrills, and a complex of geophysical equipment for doing geophysical work at depths of more than 10 kilometers. Highly mechanized drill rigs with load-lifting capability of 500 tons will be designed. A study of heat-resistant plugging materials and drilling muds is being performed.

Important chapters of the program include the compilation of space-geology, tectonic and geophysical maps of the most important petroliferous and ore-bearing parts of the country. A base is thus being laid for prognostic maps for the most important types of useful minerals.

The quantitative assessment of petroleum reserves within the country as a whole and of individual regions of it will be refined as of 1 January 1984, and optimal areas for prospecting and exploring for oil and gas during the 12th Five-Year Plan have been defined. To a great extent, existing methods for forecasting and assessing deep horizons and flanks of large fields of solid minerals are being improved, and new ones are being introduced with a view to expanding the raw-materials base for existing enterprises. The substantiation of designs for using them at depths of up to 1½-2 kilometers is being conducted.

The Geologists' Arsenal

The specific-purpose integrated program, "Creation of a Set of Methods and of Geophysical Equipment for Prospecting and Exploring for Deeplying Fields of Oil, Gas and Other Most Important Useful Minerals," will also to serve to raise the effectiveness of geological exploration. Organizations and enterprises of 12 ministries and agencies are taking part in fulfilling it. USSR Mingeo [Ministry of Geology] is the prime agency.

The complex of geophysical apparatus includes multiple-channel seismic stations, including those with telemetric signal transmission, digital recording of data for later processing on high-capacity computers, computerized multiparameter logging stations for the study of drilled holes, and electrical-exploration stations for work with high-powered current sources. This equipment will help to raise the precision, depth and resolving power of geological and geophysical information, as well as the productivity and effectiveness of seismic, electrical-exploration and logging operations.

The program calls for the creation of highly productive equipment for drilling holes down to 2 kilometers for solid minerals. These include SKB-type drill rigs and UKB (core-drilling) installations that correspond to CEMA standards, hydraulically operated drill rigs, a complex for drilling holes with hydraulic transport of the core, drill-string pipe and pipe for drilling by equipment with detachable core receptacles, complexes of diamond crowns, and reinforced synthetic and natural diamonds.

Introduction of the new drilling equipment will enable deposits of useful minerals to be found with greater effectiveness at great depths and drilling productivity to be increased 1.2-fold. In all, 44 tasks are planned for new technical resources. There is an urgent backlog of scientific research on them, and, in this connection, there is also a backlog of design-development work. Only six tasks are planned for the 12th Five-Year Plan. All the others must be carried out prior to 1986.

As a result there are new, highly effective methods and technical means for equipping the geological activity, as well as the oil and gas industry, which will permit labor productivity during geophysical operations to be at least doubled while prime production costs are being reduced 1½-fold. The economic effectiveness of introducing the innovations will be about 700 million rubles by 1985, and by 1990 it will exceed a billion rubles.

Successes and Faults

The results of the preceding 2 years indicate that both programs are being carried out successfully as a whole. Among the more successful developments are the creation of oil-filled geared turbodrills, which enable penetration per bit to be increased 1.5-fold to 2-fold.

During study of the log of the Kola superdeep hole, unique data were obtained about the structure of deep layers of the earth's crust, their temperature regimes, and conditions for forming ores, which refuted some previously existing hypotheses. By the start of this year the Kola hole's depth exceeded 11½ kilometers, and the Saatly in Azerbaijan had reached 8.2 kilometers.

Reaching such record depths, not previously accessible to anyone in the world, became a serious test for domestic metallurgy, chemistry and machinebuilding. The equipment proved itself excellently. The engineering calculations completely vindicated themselves. Soviet scientists were the first to "take a peek" into such remote hiding places of the earth.

A large amount of scientific research has been done, working papers on some types of geophysical apparatus and drilling equipment have been prepared, and test models of logging equipment and of a set of equipment with electric drive for penetrating underground mine-exploration excavations of small cross-section have been manufactured. The digital seismic stations Progress and Progress-3 and various types of nonexplosive sources for exciting seismic waves are being produced serially.

The Progress-3 station enables work to be done with sources of seismic oscillations of any type. Another great success is the Gorizont seismic exploration station, which generates geophysical information on 24-96 channels and processes it with the use of microprocessors and means for deep diagnostics. Also under way is scientific research on the development of a field seismic exploration complex (up to 500 channels) with a telemetric system for transmitting signals. Credit for this belongs primarily to the NPO [Science and Production] Neftegeofizika collective.

Unfortunately, not all program participants behave with due responsibility in fulfillment of the program's tasks. This was reflected negatively in particular in providing production organizations with drilling equipment and geophysical apparatus capable of operating at temperatures of up to 250 degrees and pressures of up to 200 megapascals.

The Uralmash Association (the general director is Ye. Varnachov) did not develop on time the technical papers on Uralmash-15000 drill rigs and did not manufacture two SPA-15 log hoists that are necessary for drilling and for studying superdeep wells. Kuybyshevburmash Association (the general director is P. Sopin) did not come forth with 300 drilling-tool joints made of high-strength steel for the Kola superdeep hole.

The Tuymazy Plant for Geophysical Equipment and Apparatus (the director is N. Tarasov) did not provide for the output of outfitting articles for PK-15 logging hoists.

Minelektrotekhprom [Ministry of Electrical Equipment Industry] (the deputy minister is Yu. Nikitin) is in great arrears. His organization never developed thyristor converters for the BU-15000 drill rig. In some cases Minelektrotekhprom, in refusing to coordinate on documentation for new articles, stuck the users with serially produced articles that did not meet the client's requirements for the product. For example, the SKB [special design bureau] (the chief is Yu. Serdukov) of an Elektromashina plant did not for more than a year coordinate on documentation for improvement of a thyristor drive for the SKB-7 drill rig in accordance with the Mingeo technical task. As a result, it has not been possible until now to conduct acceptance tests of the test model of this drill rig to the full extent. This has threatened to interrupt fulfillment of the plan task for the special-purpose integrated program.

Those who have permitted arrears must tighten up and take energetic, active measures to eliminate the deficiencies. The achievements of scientific and technical progress should be introduced into geological exploration practice more quickly and in the full amount.

Fulfillment of the tasks for scientific and technical programs that were planned for 1983 will enable the technical level of geological production operations to be raised. Thus, the share of progressive methods (high-rpm diamond drilling and the use of pneumatic strikers and equipment with detachable core receptacles, with hydraulic transport of the core) will be increased to 28 percent versus 23 percent in 1982.

The use of digital seismic stations with subsequent computer processing of the data obtained will grow by 11 percent in 1983. The use of nonexplosive seismic-signal sources will be expanded by 5 percent for seismic exploration on land.

The output of 26 new types of equipment has been planned for 1983. Minpribor [Ministry of Instrument Making, Automation Equipment and Control Systems] will manufacture 30 Progress-3 stations instead of the 15 contemplated by the five-year plan. Their introduction will enable almost a million rubles to be saved. The economic effectiveness of nuclear-physics methods of studying rock samples will exceed 200,000 rubles in 1983.

In all, new geological exploration equipment and technology introduced in 1983 will enable the labor of almost 5,000 people to be saved. Realization of tasks for scientific and technical progress will serve as a reliable basis for raising the effectiveness of an important branch of the national economy.

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OIL AND GAS

YUGANSK PETROLEUM PRODUCERS COMMITTED TO IMPROVED PERFORMANCE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Jan 83 p 1

[Article: "The Socialist Commitments of the Yuganskneftegaz Production Association Collective of Glavtyumenneftegaz [Main Administration of the Oil and Gas Industry of Tyumen Oblast]"]

[Text] The collective of Yuganskneftegaz [Yugansk Oil and Gas Industry Association], which widely promoted socialist competition for a worthy greeting to the 60th anniversary of the forming of the USSR and for recovering 1 million tons of crude oil and 1 billion cubic meters of gas per day ahead of time from Tyumen Oblast oilfields, has coped with the commitments adopted for 1982 for oil and gas recovery and for drilling wells. The national economy has been supplied with 55.8 million tons of crude.

Answering with deeds the decisions of the November 1982 CPSU Central Committee Plenum and the principles and conclusions of CPSU Central Committee General Secretary Comrade Yu. V. Androp's report, "60 Years of the USSR," strengthening labor and production discipline in every possible way, and using production reserves more completely, the association's workers have adopted the following commitments for 1983.

Carry out ahead of time the state plan for oil and gas recovery. Increase oil and gas recovery by 4.2 million tons. Produce 300,000 tons of oil above the plan. Provide for the recovery of oil in the amount of 540,000 tons above the five-year plan completely through growth in labor productivity. Drill 10,000 meters of oil wells above the task. Increase the average penetration per brigade by at least 19 percent. Overfulfill the task on realization of output by 6.8 million rubles, and obtain more than 3 million rubles of above-plan profit.

Speed up the introduction into operation of new capacity, the integrated automation of oil-recovery processes and the conversion of wells to more effective methods of operation, and disseminate advanced experience more rapidly. On the basis of prudent and more rational use of all types of fuel, energy and material resources, save 42 million kW of electricity, 4,000 tons of standard fuel equivalent, 1,500 tons of drilling and casing pipe, a substantial amount of rolled metal, and other material. Obtain an annual saving of at least 1.3 million rubles from the introduction of new equipment and advanced techology and from rationalizers' suggestions and inventions.

With a view to improving the welfare of the workers, put into use, jointly with contracting construction organizations, 120,000 square meters of living space,

preschool institutions for 650 children, dining rooms for seating 260 people, schools for 3,136 pupils, and stores and storage premises totaling 3,2380 square meters in area. Increase the effectiveness of the conduct of the subsidiary economy, and build calf pens for 500 head. Turn over to the workers' supply system 11,800 quintals of milk, 1,900 quintals of meat, 5 million eggs, 4,800 quintals of vegetables and 300 quintals of fish.

We assure the CPSU Central Committee that we shall provide for fulfillment of the socialist commitments adopted with our highly productive labor, and we shall make a meritorious contribution to the further development of our beloved motherland's fuel and power complex.

The Yuganskneftegaz collective calls upon all the country's oilfield workers to promote competition for raising production effectiveness still more widely, to fulfill ahead of schedule the plan for the third year of the 11th Five-Year Plan, and to implement 26th CPSU Congress decisions.

The socialist commitments were discussed and adopted at a meeting of the association's labor collectives.

11409
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CONSTRUCTION PROCEEDING APACE AT NEW GAS FIELD IN ZAUNGUZSKIYE KARAKUMY

Ashkhabad TURKMENSKAYA ISKRA in Russian 9 Feb 83 p 1

[Article by N. Sosnina and G. Sokolova: "In the Depths of the Karakumy"]

[Text] One more gas-field installation for the republic is being born here at Severnyy Balkun, as this field, which is situated in the Zaunguzskiy Karakumy, is called. A collective of Construction Administration No 4 of Naipgazstroy [Naip Trust for the Construction of Gas Industry Enterprises] is running the construction site. The job is large, but VNIPIgazdobycha [All-Union Scientific-Research and Design Institute for the Gas-Recovery Industry] designed it to be compact and convenient. The Saratov designers incorporated here equipment with a high degree of factory preparation and the use of box modules. Large components, for example flame regenerators, furnaces, and so on, arrive here already assembled and welded. The builders have only to install the equipment on footings, a fact that has facilitated and speeded up the work by far.

The Balkun Department of Subsidiary Production of SU-4 [Construction Administration No 4] is helping the builders greatly. It is manufacturing and sending them prefabricated footings, but the main lever for speeding up the project is good organization of and effective work by the people. All the underground utility and service lines, for example, have been laid--this means that the way has been paved for calm, deliberate work by the brigades. Contacts have been arranged with the subcontracting organizations--the operating chain is not being violated. It is no accident that people strive to do everything possible to bring the startup closer. The SU-4 collective is the only one in the trust that is fulfilling its plans.

Knight of the Orders of Lenin and Labor Red Banner A. Iskanderov is working on an operating pipe rack. He participated in erection of the compressor stations at Khiva and Achak. Here in Balkun, two of his sons are working with him. Just like other members of their father's brigade, they exceed the norm 1½-fold. The masonry workers of Yu. Dzhumaniyazov's brigade have excellent work indicators. Kh. Niyazmetov and Yu. Khudaybergenov can be proud of the high output of their collectives. The installers are busy right now at the installation for the columns and on the desulfurizer; they are beating the schedule, and they are turning over their work with excellent quality.

Severnyy Balkun is a shockwork construction project for Turkmen gas-field workers. All who are employed here at the complex are united in their striving to work with precision and in organized fashion and to save the worker's minute. An atmosphere of feverish labor rivalry reigns here.

In June the new complex should be put into operation.

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HEALTH WORKER URGES DRILL RIGS BE CONVERTED TO ELECTRIC DRIVE, AUTOMATED

Minsk ZDRAVOOKHRANENIYE BELORUSSII in Russian No 7, Jul 82 pp 47-48

[Article by V. P. Mikshas of the Rechitskaya Sanitary and Epidemiological Station of Gomel Oblast: "The Hygienic Characteristics of the Working Conditions of Blue-Collar Workers Engaged in Drilling Petroleum Wells in Belorussia"]

[Text] The oil and gas recovery industry has been developed intensively in the republic in the past 10 years. A substantial pace of growth is defined for it also during the new five-year plan.

The basic operating stage in the oil and gas recovery industry in terms of complexity and labor intensiveness of the work is that of drilling oil and gas wells. The wells are built by means of drill rigs that operate on diesel or electric drive. The wells are drilled by both rotary and turbine methods. The choice of drilling method is governed by geological-engineering, technical and economic indicators. The distinction between the rotary and turbine methods is that in the first case bit rotation is transmitted from a surface mechanism by a rotating drill-pipe string, while with the turbine method the bit is rotated by a downhole turbine motor installed directly above the bit.

The brigade's work on the rig consists of the following basic operating elements: preparatory work for the start of well drilling, the actual drilling of the well, round-trip drill-pipe operations for changing worn bits, casing the well bore with a casing string and flow tubing, with later cementing thereof, and work to eliminate possible emergency situations, and the process of well completion for handling the production flow of crude oil or gas.

The petroleum industry has certain specific peculiarities: the facilities are developed at a distance from populated places and transport arterials; the workers are sent to the workplace by bus, often by helicopter; the work process occurs in the open air; and the lower part of the rig is faced to a height of 8-10 meters with tarpaulin, for protection against the wind and atmospheric precipitation.

Gomel Oblast's climate is a moderate continental one, with a maximum temperature of 38 degrees and a minimum temperature of -36 degrees, while the average annual temperature is 6 degrees. The prevailing winds are westerlies and northwesterlies in the summer, southerlies and southeasterlies in the winter.

The drilling brigade's work is organized as follows: two parties operate on an 8-hour schedule for 4 days, with an 8-hour rest between shifts. Then they spend

the next 4 days resting in city or village housing. The necessary sanitary and living premises for rest in the intervals between shifts are provided: boiler-rooms that operate around the clock, rest rooms, showers, driers for coveralls, and recreation and reading rooms with literature and game tables.

The vocational factors that affect drilling-brigade workers include: round-the-year work in the open air; great physical workload in moving tools that weigh from 50 to 70 kilograms (bits, slips, pipe and so on); the noise generated by the diesel motors, the chain drives of the hoist and the rotor, and the discharge of compressed air in the open; vibration created by the operation of pumps, the hoist and the diesel motors; the carbon monoxide and products of incomplete combustion from diesel-motor operation; and the vapors of hydrocarbons and other chemical substances from the chemical reactants used in the muds.

During drilling the noise at workplaces near the diesels reaches 108-115 decibels (exceeding the maximum permissible spectrum at a frequency of 2,000 Hz). The loudest noise (up to 120 decibels) is generated by the diesels during round-trip operations, when the rig is working at maximum load. At the same time, the noise on rigs with electric drive is 20-26 decibels lower than on those with diesel drive. The carbon monoxide concentration in the air in the work area of drill rigs with diesel drive exceeds the PDK [maximum permissible concentration], especially when the exhaust is located to the windward side. In windfree weather, the carbon monoxide content is within the PDK limits. It was not determined that hydrocarbon vapors occur in concentrations that exceed the PDK.

Measurements of artificial lighting showed that its levels do not correspond with the industry's illumination norms.

During stopwatch measurements of drilling-brigade worktime, it was established that round-trip operations, which take up 20-80 percent of all the worktime during a shift, involve the greatest nervous stress and coordination from all brigade members. The duration of these operations depends upon the depth of well penetration, the drilling method, the drilling regime, rock hardness and so on. The greatest physical stress during operations was noted on the part of the assistants of the drillers, especially the derrickmen.

The share of round-trip operations is higher with the turbine method of drilling than with the rotary method, since penetration per bit is much less with turbine drilling, and, consequently, the bit must be changed more frequently, that is, the round-trips must be made more frequently.

As is evident from the table, the morbidity with temporary loss of work capacity is higher for the drillers than for the diesel operators. The drillers get sick more often with respiratory illnesses, influenza, illnesses of the osteomuscular system, primarily radiculitises, and illnesses of the respiratory organs.

Morbidity with Temporary Loss of Working Ability for Drillers and Diesel Operators

Trades	Number of cases	Number of cases per 100 workers	Number of days	Number of days of lost time per 100 workers
Drillers.....	49	12.5	378	97.0
Diesel operators.....	34	10.9	292	94.1

Thus a study of the working conditions and the health status of workers during the drilling of oil and gas wells has made it possible to establish the unfavorable effect of the complex of chemical and physical factors on the workers' bodies and to develop a number of recommendations for health protection.

Health protection measures relate primarily to the conversion of drill rigs from diesel to electric drive.

No less important measures are: the mechanization of round-trip operations by supplying automated ASP-III equipment, pneumatic circular AKB-3M and PKB-4 tongs, and PKR-47 drill-pipe power slips; the mechanization of manual labor through the erection of traveling jib cranes and automatic pickup of the kelly in the rathole; and organization of the workplace and place of rest on the basis of unified methodological approaches and standard developments.

Conclusion

The conduct of health-protection measures will reduce but not eliminate the complex of unfavorable production factors. Therefore, it is necessary to create automated drill rigs with remote control of all drilling processes.

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BRIEFS

BASHKIR OILMEN CLAIM EFFICIENCY--Ufa--Bashneft' [Bashkir ASSR Oil Industry Association] collectives have recovered 250,000 tons of fuel above the goal since the start of the year. This is 30,000 tons more than the previously adopted commitments. During the shock-work drive in honor of the 60th anniversary of the forming of the USSR, all recovery administration collectives have promoted the competition to make full use of the potential of each well and increased operating time between repairs. The oilfield workers have managed to increase the operating period of the recovery capacity between repairs by 40 days, enabling thousands of additional tons to be extracted from the ground monthly. The collectives of the Arlan, Chekmagushevsk and Krasnokholm oilfields have attained the highest indicators these days. [I. Payvin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Dec 82 p2] 11409

METALLURGICAL EXHAUST-GAS RECOVERY--Cherepovets--The gas-recovery turbines of the Cherepovets Metallurgical Plant generated more than 100 million kW of electricity last year. The technically new electrical machines were installed alongside blast furnaces and coke batteries. Their fuel is exhaust gas. [V. Minin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Jan 83 p 2] 11409

ALMETYEVSK GLASS-LINED PIPE--Almetyevsk--The experimental department of the Production Operations Servicing and Outfitting Administration of the Order of Lenin Tatneft' [Tatar ASSR Oil Industry Association] has produced the 7-millionth running meter of pump and compressor pipe. The pipe's inner walls are covered with a fine film of glass made of epoxy resin. By using it, oilfield workers of the autonomous republic have, for 15 years now, not been bothered with...paraffin. The fact is that oil that is at a high temperature at a great depth cools on being raised to the surface. As a result, paraffin settles on pipe-wall surfaces, and this can cause the well to clog up. This does not occur if the pipe's walls are covered with the epoxide. Scientists of the Tatar Scientific-Research and Design Institute for the Oil Industry proposed the progressive technology. [F. Manasypov] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 5 Jan 83 p 1] 11409

KOMI ABOVE-PLAN OIL RECOVERY--Ukhta (Komi ASSR), 13 Jan--An old pumping jack has been installed on a concrete pedestal. "Well No 62--the Initial Discovery of the Yarega Oilfield" was inscribed on a cast-iron slab. This commemorative sign was solemnly unveiled the other day in Yarega--not far from Ukhta, where so-called heavy crude is recovered by the pit method. The collective of the local oil-mining administration is firmly maintaining primacy within Komineft' [Komi ASSR Oil Industry Association]. By heating up the productive formation and pumping hot steam

into it, the oilfield workers last year extracted 422,000 tons of valuable raw material--5,000 tons more than had been planned. [PRAVDA stringer A. Kurkov] [Text] [Moscow PRAVDA in Russian 14 Jan 83 p 1] 11409

UDMURTIA ABOVE-PLAN OIL RECOVERY--Izhevsk, 18 Nov--Udmurtia oilfield workers have produced 70,000 tons of "black gold" above the plan. The commitments in honor of the 60th anniversary of the forming of the USSR have been overfulfilled. Udmurtia is one of the country's youngest oil-recovery regions. But in pace of growth of recovery of the valuable raw material, this region is among the leaders. One more fact is noteworthy: people of 40 nationalities and ethnic groups of the country are recovering the riches of Udmurtia's ground. [PRAVDA stringer A. Artamonov] [Text] [Moscow PRAVDA in Russian 19 Nov 83 p 1] 11409

TURKMEN GAS FIND--The geologists have discovered about 10 underground gas stores to the south of the Karakumy. In the not so distant future a new gas-recovery complex will rise up here. It is planned to obtain the first 7½ million cubic meters of the blue fuel in 1983. Gas pipelines are already being laid and a highway is being built. The construction site of a plant for primary gas-treatment is being leveled. Drillers of the Turkmen SSR Geology Administration are continuing the search for new sites at the Dauletabad-Donmezskoye field. [Text] [Baku VYSHKA in Russian 10 Nov 82 p 3] 11409

OIL-REFINING FACILITIES CONSTRUCTION--USSR Minneftekhimprom [Ministry of Petroleum Refining and Petrochemical Industry] reports about the article, "Use Crude Oil Thriftily." A broad program of measures, the fulfillment of which will provide for the rational and effective use of crude oil for the needs of the country's economy has been developed. The USSR Ministry of Petroleum Refining and Petrochemical Industry has examined the article of the director of the All-Union Scientific-Research Institute for Oil Refining (VNIINP) and Doctor of Engineering Sciences Ye. Radchenko (Nos 68/69, 1982), and comments that the problems raised in it are urgent, especially for the long-term development of the oil-refining industry. Steps have been taken to solve these problems. In particular, the construction of a G-43-107 combined installation for catalytic cracking at the Moscow NPZ (Oil Refinery) and a KT-1 combined installation for refining mazut at the Pavlodar NPZ has been completed. USSR Minneftekhimprom, jointly with USSR Gosplan, has worked out a program of measures that are aimed at introducing into operation in coming years facilities for the severe refining of crude. The construction of six G-43-107 installations for catalytic cracking and of two KT-1 combined installations for refining mazut, two installations for hydrocracking, and a number of installations for producing coke and for calcining it, which will provide for the refining of tens of millions of tons of mazut and light-oil product and coke, is planned. Also to be built is a plant for producing catalysts for severe refining of crude, the largest in the USSR [Text] [Moscow IZVESTIYA in Russian 8 Jan 83 p 1] 11409

WEST SIBERIA OIL GEOLOGY--Kharkov--Natural gas deposits in West Siberia are located, as a rule, in the valleys of rivers that flowed there tens of millions of years ago. Kharkov University scientists who analyzed the characteristics of the ancient relief in detail came to this conclusion. "Remote seismic sounding data, on the basis of which mathematical models of the fields were created, helped us in this," says manager of the operations, Doctor of Engineering Sciences I. Cherpanev. "Thus, for example, it was established that a substantial portion of the gas reserves of Medvezhye, in the Far North, is concentrated in the network of river bottoms that existed 40 million years ago, close to an ancient sea. This territory was then

flat country, similar to the modern deltas of the Volga or Kuban'. Sandy sediments, from which gas-impregnated rocks later were formed, were found in the bed of a river and its tributaries. Knowing about this, we could judge fairly precisely the structure of the formations of gas deposits." [V. Gatash] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Jan 83 p 2] 11409

DAVLETABAD GAS ENTERS PIPELINE--The Davletabad gas field is the new pearl of Turkmenistan. Its first phase was connected the other day to the country's fuel and power complex. About 38 million cubic meters of fuel taken from Karakumy ground were fed into the Central Asia-Central Economic Region trunk gas pipeline. Each day more than 5 million cubic meters of cheap natural gas will enter it. A huge gas-recovery complex--an integrated gas-treatment installation and a gas pipeline 1,420 millimeters in diameter and 141 kilometers in length--were erected in the desert and deep wells were drilled almost half a year ahead of schedule. The new gas region in the desert went into operation ahead of time, thanks to the fraternal assistance of specialists of Russia, Belorussia and Uzbekistan. Construction and erecting workers, drillers and well operators toiled selflessly. Brigades of builders and installers from Shatlykgazstroy [Shatlyk Trust for the Construction of Gas Industry Enterprises], Sredazneftegazstroy [Central Asian Trust for the Construction of Oil and Gas Industry Enterprises], Sredazneftegazmontazh [Central Asian Trust for the Erection of Oil and Gas Industry Facilities] and other subcontracting organizations of the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises made a major contribution to the erection of this important facility. [Yu. Panfilov, chief of the Gas-Recovery Section of VPO Turkmengazprom [All-Union Turkmen Gas Industry Association]] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 13 Jan 83 p 1] 11409

APSHERON OIL EXPLORATION IMPROVING--VYSHKA published on 29 December 1982 a report under the headline, "Things Haven't Budged a Bit," in which deficiencies in organizing exploratory drilling by the Apsheron UBR [Drilling Administration] were disclosed. UBR chief G. Gasanov and party-organization secretary M. Mamedov have reported to the editorial board that the article was discussed at an open party meeting and the criticism it contained was recognized as timely and correct. Communists and nonparty workers of the UBR who spoke at the meeting expressed many valuable suggestions aimed at most rapid elimination of the deficiencies that the article had noted. The answer points out that the drilling of exploration Hole No 1490 at the Kala site is proceeding normally, without complexities. Measures are being taken to insure timely commencement of drilling and strict observance of the drilling schedule of two other exploratory holes. [Text] [Baku VYSHKA in Russian 29 Jan 83 p 3] 11409

KALMYK HOLE PRODUCES CRUDE--The first exploration hole, 3,015 meters deep, in Chernozemelskiy Rayon of Kalmykia has produced crude. Drilling foreman Vasiliy Narayev's brigade from the Astrakhan Drilling Administration] coped successfully with its important task. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Jan 83 p 2] 11409

NEBIT-DAG OILFIELD PROGRESS--Nebit-Dag--The republic's oilfield workers are toiling rhythmically in the third year of the 11th Five-Year Plan. In January the Turkmenneft' [Turkmen Oil Production Association] collective sent out about 6,000 additional tons of "black gold." Advanced subunits, in increasing the work pace, have improved all technical and economic indicators. The collective of the second field of the NGDU [Oil and Gas Recovery Administration] of Nebitdagneft' [Nebit-Dag Oil Production Association] has distinguished itself in the labor rivalry. After committing itself to recovering 1,840 tons of crude above the annual plan, it is seeking out all unused reserves and potential for increasing crude-oil recovery. Geological-engineering measures have been planned and are being implemented successfully to stabilize formation pressure and to increase the operating regimes of the equipment throughout the whole operating chain. Gaslift is giving great benefit. The conversion of well No 976, for example, to this method of operation has permitted a daily increment of as much as 50 tons of "black gold" to be obtained. At some wells that have ceased flowing, particularly Nos 727 and 771, the deep-pump method of extracting liquid fuel has been used. The operating inventory is being augmented by new high-flow rate wells. Well No 414, which was recently put into operation, is giving as much as 100 tons of crude per day. Using advanced ways and methods, high indicators are being achieved by the collectives of the sections headed by S. Kaypkuliyev and D. Davydov. The measurement of well-operating parameters and the repair of wells are being performed carefully, and timely measures are being taken to raise the flow rate. [TURKMENSKAYA ISKRA correspondent. By telephone] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 9 Feb 83 p 1] 11409

KOMI OIL-PIPELINE FLOW--Ukhta (Komi ASSR), 27 Nov--Since the start of the year, Ukhtatransgaz [Ukhta Gas-Transport Association] has sent 2.2 billion cubic meters more gas over the Punga-Vuktyl-Ukhta-Torzhok pipeline system than had been pumped during the whole preceding year. During the remaining days of November and December the amount of gas transported will increase by several billion more cubic meters. This growth has been provided thanks to the introduction into operation a year ago of the Urengoy-Gryazovets pipeline, which came up to the designed regime in the first quarter of this year. Thus "blue fuel" is now being sent to the country's central regions over four steel channels. [PRAVDA stringer A. Kurkov] [Text] [Moscow PRAVDA in Russian 28 Nov 82 p 2] 11409

KAZAKH PETROLEUM PRODUCT DISTRIBUTION--Workers of Kazakh SSR Goskomnefteprodukt [State Committee for Supply of Petroleum Products] enterprises are making a meaningful contribution to the fulfillment of five-year plan tasks. They supplied the republic's economy in 1982 with half a million tons of fuel and lubricants more than in the first year of the five-year plan. Plans for overhaul and services to the population were overfulfilled. At the same time, a number of enterprises did not cope with their tasks. The branch's workers are focusing their efforts on eliminating deficiencies and improving the work of all labor collectives, in light of the decisions of the November 1982 CPSU Central Committee Plenum and 8th Kazakhstan CP Central Committee Plenum. Kazakh SSR Goskomnefteprodukt workers are improving the supply of petroleum product, primarily to enterprises that are implementing the country's Foodstuffs Program. It is planned this year to increase storage capacity and to start up the first phase of the Petropavlovsk-Kokchetav-Tselinograd product pipeline. A substantial amount of spent petroleum product will be returned to production. The execution of what had been planned was started successfully with the first month of the third year of the five-year plan. [KazTAG [Kazakh SSR Telegraph Agency]] [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 23 Jan 83 p 3] 11409

NADYM GAS OUTPUT RISES--Nadym (Yamalo-Nenetskiy Autonomous Okrug), 13 Jan--The first millions of cubic meters of "blue fuel" above the plan were recovered since the start of the year by gas-field workers of Nadymgazprom [Nadym Gas Production Association]. Operators N. Mezhevich and A. Mozalev, electrical repairman P. Shukhno and repair mechanic M. Marynich took first place in the competition. [PRAVDA correspondent V. Lisin] [Text] [Moscow PRAVDA in Russian 14 Jan 83 p 2] 11409

UKRAINIAN GAS FOR EUROPE--Ivano-Frankovsk Oblast--An installation for treating natural gas that is intended for export has started to operate. The gigantic industrial facility, which is tended by only 7 people, is spread out over an area of 20 hectares. The gas that comes here from various fields will be scrubbed of moisture and condensate and sent into the Bratstvo gas pipeline, over which the "blue fuel" will go abroad. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 5, Jan 83 p 24] 11409

TYUMEN OILFIELD WORKERS' EXAMPLE--An example of the skillful use of worktime is being set by Glavtyumenneftegaz [Main Administration of Tyumen Oblast for Oil and Gas Production] drillers. Yesterday they drilled the 30,000th meter of oil-well hole above the task since the start of the year. The penetration schedule has been surpassed by days. The brigades of foremen V. Sidorenko, A. Kuz'min, A. Shukyurov, A. Spitsyn and Yu. Abakumov set a high rhythm, having achieved on the eve of the 60th anniversary of the forming of the USSR the highest labor productivity in the industry. This year each collective decided to transfer to the oilfield operators a record amount of hole--no less than 100,000 meters. More than 50 West Siberian brigades are following their example. To work with maximum yield, the drillers need the help of allied workers. The derrickbuilders, for example, assembled more new drill rigs than had been planned. The builders and equipment operators laid down roads in a short time to the oilfields of the future and prepared sites for drilling on the marshy fields. The speeds achieved by the Tyumenites are viewed as a reliable springboard for new labor victories. During the current year they are to drill more than 15 million meters of hole--almost twice as much as was drilled during the whole Ninth Five-Year Plan. [TASS] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Jan 83 p 1] 11409

'PROGRESS-2' SEISMOGRAPHS SHIPPED--Moscow--Equipment that Moscow's Geofizpribor Association produces will enable the efficiency of prospecting operations to be raised. The enterprise's collective has filled an important order for the geologists who are exploring for oil and gas. A consignment of Progress-2 digital seismographic exploration sets has been dispatched. This equipment will enable the pace of processing materials collected under field conditions to be speeded up. Installed on the basis of an all-terrain motor-vehicle, the equipment can also be easily sent to a place where there are even no roads. Great significance is being attributed to the development of West Siberia's fuel and power complex. That is why Moscow's instrumentmakers worked with special thoroughness on the latest order. The best production workers assembled the equipment for the Siberians. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 17 Nov 82 p 1] 11409

LOWER VOLGA OIL FINDS--Volgograd--Last year, as a result of wide prospecting and exploration in the region, Nizhnevolzhskneft' [Lower Volga Oil Production Association] specialists discovered several oil and gas fields. Most interesting among them were the Tersinskoye and Severo-Komsomol'skoye, which are convenient for development. New deposits also were discovered in productive areas identified earlier. All this has enabled Nizhnevolzhskneft' to fulfill greatly in excess its plan for growth of reserves. [I. Mordvintsev] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 21 Jan 83 p 1] 11409

11409
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COAL

COAL OUTPUT IN 1983 NOT LIKELY TO MEET FIVE-YEAR PLAN TASK LEVEL

Moscow EKONOMICHESKAYA GAZETA in Russian No 4, Jan 83 p 4

[Article: "In Accordance with a Strenuous Plan"]

[Text] It is planned to mine 723 million tons of coal in our country this year. Of that amount, USSR Minugleprom [Ministry of Coal Industry] enterprises should produce 716.1 million tons.

"Workers of underground and surface mines," deputy minister G. I. Nuzhkdikhin said in a conversation with EKONOMICHESKAYA GAZETA's correspondent, "are to mine and to ship to the national economy 6 million more tons of coal than they did last year."

At the November 1982 Party Central Committee Plenum, Comrade Yu. V. Andropov indicated that "strenuous tasks should be executed with a comparatively smaller increase in the expenditure of material and labor resources." This relates completely to our branch of the fuel and power complex. We have tried above all to bring the 1983 tasks to each enterprise in good time. The search for reserves has been conducted from the bottom, beginning not just with the underground and surface mine, but also with each seam and horizon. Special ministry working commissions have completed work on the plan to increase intensification of the coal industry.

Plans for developing underground mines and plans for the mining operations, for reequipping the mines with machinery, and for the use of the equipment have been thoroughly analyzed and refined.

Last year's tasks for mining coal, labor productivity and other technical and economic indicators of the industry were carried out. Coal-industry workers invested no little effort in eliminating the lag that had been permitted in recent years. Not all the results that were achieved in 1982 can be considered as sufficient. Fourteen production associations out of 54 did not carry out the annual plan.

The strenuous plan for the current year took shape on the basis of recommendations received from laboring collectives, and the requirements for providing the national economy with solid fuel in 1983 were considered. We proceeded from the potential for disseminating advanced experience, improving brigade organization of labor, and making wider use of other factors for intensifying production.

The underground-mine collectives received the approved plans on time. And not only for in-kind indicators--the mining of coal, its processing at preparation plants, shipments for coking, and output of large and medium-size grades of coal and briquettes.

We made increase in labor productivity the main prop for improving qualitative indicators of the branch's work. For the first time in the coal industry, the annual plan incorporated growth of commodity output without any kind of an increase in worker manning. Through which factors was this reached? There were several--an improvement in technology and a concentration of production, mechanization and automation, the introduction of NOT [scientific organization of work], and an increase in the share of mining coal by the surface-mining method.

The movement of the "thousandeers"--the competition to mine at least 1,000 tons of coal per day from the mine face--especially should be mentioned.

Last year 442 collectives exceeded the 1,000 mark. In all, they gave almost 180 million tons of fuel. The merits of the "thousandeers" are great, but their overall successes can be greater. The number of brigades that mine 1,000 or more tons of coal fell during the year in the Donets, Kuznetsk and Karaganda basins.

At the mines there are 1,350 breakage faces equipped with mechanized longwall miners. Of them only one-third are operating with a workload of 1,000 or more tons per day. At the other faces, the complicated and expensive machinery does not give the required yield.

The plan for this year defines specific measures for brigades to use modern mining equipment and advanced experience in organizing labor. This will enable the number of breakage faces at which 1,000 or more tons of fuel per day are mined to be raised to 500.

Urgent problems of developing the "thousandeers" movement were examined at a conference of advanced brigade leaders that was held at the ministry on 12 January. The meeting's participants cited cases of the unsatisfactory use of equipment, worktime losses, and poor dissemination of the work methods of advanced collectives. The tasks in this matter were also discussed at a joint session of the USSR Minugleprom Board and the industry's trade-union central committee.

Because of the worsening of mine-geology conditions in the Donets and Kuznetsk and certain other basins, the ash content of the coal mined is increasing. It will also increase in 1983. However, the ash content of the fuel dispatched to customers will be held at last year's level. New preparation plans are being built and existing ones expanded.

The growth in mining that is being planned will not permit the industry as a whole to reach the level of the five-year plan tasks for 1983. But there are collectives of production associations that have adopted production programs equal to the five-year plan tasks. I shall name them: the Vorkuta, Karaganda, Inta, Rostov, Gukov, Far Eastern, Kizel and Central Asian Coal Production Associations.

Six production associations, including the Kemerovo, Eastern Siberia, Primorskiy Kray, Vakhrushev, Yakutia and Northeastern, will increase the mining of fuel above what the five-year plan requires.

Of these, counterplans have been adopted by miners of the East Siberian (they asked that the plan be increased by a million tons) and the Northeastern and Yakutia Coal Production Associations. It should be emphasized that conversion to counterplanning is being accomplished in the coal industry for the first time. Our experience still is not great. Work to develop counterplanning continues.

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COAL

DONETSK COAL MINERS OVERFULFILL 1982 PLAN, CLAIM GOOD START FOR 1983

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Jan 83 p 1

[Article by P. Negrutsa, brigade leader of a breakage face of the Underground Mine imeni Zasyad'ko of the Donetsk Coal Production Association and Hero of Socialist Labor] (Donetsk): "In Deep Horizons"]

> [Text] Last year Donetskugol' [Donets Coal Production Association] miners undertook high socialist commitments in honor of the 60th anniversary of the forming of the USSR. They coped successfully with what had been planned. Donets workers are working in shock-work fashion also during the new year.

Each year, at the start of January, the leaders of the city's advanced mining and tunneling brigades assemble in the Donetsk City Committee of the Ukrainian Communist Party in order to analyze their work, exchange experience and note plans for the future. The meetings have become traditional, and, while it is time I became accustomed to them, I still cannot help but become excited. Here I meet my old friends--rivals in the competition. I listen to their stories about the past year and about their intensions.

I will say it right away: Donetskugol' Association collectives coped successfully with their tasks and socialist commitments of the past year. The customers were sent 730,000 tons of fuel above the plan. Advanced miners' collectives of 20 mining and 20 tunneling brigades, which operate in a precise rhythm each day and use mining equipment with skill, made a meaningful contribution to the total success. The competition leaders cut labor and material expenditures for the mining of each ton of fuel and increased labor productivity. Last year these brigades alone sent to the top 5 million tons of coal, 270,000 tons of it above the plan. The tunnelers drilled 38 kilometers of mining excavations under the complicated conditions of deep horizons.

The brigade of Hero of Socialist Labor A. Polishchuk from the Trudovskaya Mine set the tone in the competition for a worthy greeting to the 60th anniversary of the forming of the USSR. Not one brigade in the oblast rose to such a height. SOTSIALISTICHESKAYA INDUSTRIYA has already told about the successes of this brigade.

Our miners also coped successfully with high socialist commitments. Last year the Underground Mine imeni Zasyad'ko sent the customers 1.8 million tons of coal from the mine face, of which 280,000 tons were above the plan. This is almost double the original commitments. There are no lagging sections or brigades at the mine,

and much has been done by way of mechanizing manual labor and introducing advanced methods for organizing production. The mine's engineers and technicians are successfully guiding the miners' actions, they have insured the timely transfer of brigades from one mine face to another, and they have developed a new and effective system for excavating seams at deep horizons.

As for the work of our section, back in July we sent to the top 50,000 tons of coal above the plan and carried out annual socialist commitments. Then, after uncovering our reserves, we decided to send another 40,000 tons above the plan to the top. And we kept our word with honor: in all, our above-plan account for the year consisted of almost 94,000 tons of coal. The plan for labor productivity was fulfilled 116.4 percent.

I. Manekin's brigade from the fourth section, with which we have been competing, achieved the same success. Our rivals are marching shoulder to shoulder with us. We take one and the same seam, and we have identical equipment. We started the current year successfully, having already mined, in all, more than 3,000 tons of coal above the task.

Other miners' collectives in the association are working quite well this year. However, at the city party-committee meeting, reference was made not so much to the successes achieved as to unused reserves. Almost all the miners' leaders spoke about the necessity to strengthen labor discipline, to deal decisively with absenteeism, to use moral and material incentives more widely for indoctrination, and to pay more attention to the vocational and ideological tempering of the miners.

Our motto should be: "A high state of discipline and organization is the norm for each workday." The mine's party organization and administration are doing much work in this area. In the section where I work, at the suggestion of A. Pchelkin's team, a decision was adopted under which applications of newcomers and of those who are leaving the section will be mandatorily reviewed at the brigade council. It is certain that this will clip the wings of the fly-by-nights.

Raising labor and production discipline is a most important reserve for increasing the pace or coal mining. It is necessary only that all the underground mines use it wisely. Twenty advanced miners' brigades of the association have started their work in precisely this way. They have committed themselves to completing the plan for the first 3 years of the five-year plan by the 66th anniversary of the Great October and to send to the top, jointly, 260,000 tons of coal above the plan.

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COAL

KRASNOARMEYSK COAL MINES PRODUCING ABOVE PLAN

Kiev PRAVDA UKRAINY in Russian 4 Nov 82 p 2

[Article by V. A. Afanas'yev, director of the Krasnoarmeyskugol' Association (Donetsk Oblast): "A Confident Step"]

> [Text] In competing for a worthy greeting to the 60th anniversary of the forming of the Union of SSR's, Krasnoarmeyskugol' [Krasnoarmeysk Coal Production Association] miners are increasing the fuel-recovery pace daily. A couple of days ago they sent the customers half a million tons of coal that had been sent to the surface above the plan. In comparison with the corresponding period of last year, mining volume has risen by more than 400,000 tons, labor productivity of the mineworkers by 8 percent, and the prime cost or producing 1 ton of fuel has been reduced by 28 kopecks, enabling almost 1.8 million rubles of above-plan profit to be obtained.
>
> Association director V. A. Afanas'yev tells our correspondent, N. Litvinenko, about the mining collective's success.

"During the second year of the five-year plan the association's miners committed themselves to sending 8,675,000 tons of coal to the surface, including 545,000 tons above the task. Using the experience of advanced workers and production innovators, they fulfilled the program for the first 9 months of the year ahead of time, on August 10.

"The success did not come by itself, the forces of all were concentrated on achieving the goal--from the breakage-face workers to the association general director. A special commission was created for responsive assistance to Krasnoarmeyskugol' collectives. Responsible workers of the association were attached to each 'thousandeer' longwall. They are skillfully directing the miners' efforts toward solving the burning tasks, particularly the integrated mechanization and automation of production processes in all sections. They pay special attention to increasing performance discipline, intensifying personal responsibility for the assigned job, and maintaining a healthy psychological and moral climate.

"At the beginning of this year V. I. Ignat'yev's brigade from the Krasnolimanskaya Underground Mine addressed all the association's miners with an appeal to promote competition in honor of the anniversary under the motto, 'A maximum workload at each mine face.' The bureau of the Krasnoarmeysk City Party Committee approved

this patriotic initiative. The initiators, as befits right-flankers, showed an example of the successful use of mining equipment and constant improvement in the organization of work and production. Their repair shift plays a special role. Without daily preventive maintenance, reliable operation of the mine's machinery is impossible. Three brigades are sent out for repair operations. In return, the mining elements have been enabled to give 1,000 tons of coal per shift. In July they began to master the first 1UKP complex in the Donbass, and, with its help, brought the average daily workload per longwall up to 2,445 tons. On some days the miners get 3,000 tons of fuel or more each.

"The mine face at which V. I. Ignat'yev's brigade works has become a school for many collectives of neighboring underground mines. It is here that brigades of coal miners under A. P. Romanchenko from the Rodinskaya mine, N. Ya. Reshetnikov from the Underground Mine imeni Stakhanov, V. S. Volkovskiy from the Tsentral'naya mine, and A. A. Brodyak from the Underground Mine imeni Dimitrov, and many others grasped the science of the 'thousandeers.'

"Right now 12 longwalls that have a workload of 1,000 or more tons of coal per day are being worked in the association. They are producing more than 65 percent of the fuel. The level of mining by mechanized longwall mining machines is above 94 percent.

"Not only brigades but also whole mines--among them the Rodinskaya--are traveling the road of the advanced workers. The Rodinskaya's collective bears the title 'enterprise of high production sophistication,' and is a model of work organization. In performing mining and tunneling operations with mechanized longwall machines, the miners are the first in the association to begin to produce coal on the account of the third year of the 11th Five-Year Plan. One and a half million tons of fuel, 230,000 tons of it in addition to the task, have been sent to the surface and on to customers.

"Coal miners of the Communist Labor Brigade from the second section, under A. P. Romanchenko, have made the greatest contribution to the labor victory. Operating the KM-87E longwall miner skillfully, they have produced more than 121,000 tons of above-plan fuel since the start of the five-year plan.

"And the miners of the Underground Mine imeni Stakhanov have been taught the art of compressing time. Among the ten mining brigades, there are none that have not coped with the task, and three of them have gone into the ranks of the 'thousandeers.' And it is not just for a day or two that they load up 1,000 or more tons of coal each from the underground stores, but from month to month, constantly. This has enabled the enterprise to set a schedule for mastering the designed capacity for the whole year. Nowadays mining exceeds 8,000 tons of fuel daily here. In the Donbass today there are no underground mines equal to this enterprise in scale of production and degree of equipping.

"We can raise labor productivity and reduce the prime production cost of the fuel even more. But not everything depends upon the miners alone. Back last year a number of the association's mines transferred to thin seams, but we do not have the machinery yet for these longwalls. Among such enterprises are the Tsentral'naya Underground Mine, where three 'thousandeer' longwalls are being operated. How to maintain high coal-mining output in the future without modern KM-103 longwall miners, which are intended precisely for thin seams? The answer to that question

should be given by the USSR Ministry of Coal Industry, for it had planned to deliver to us in 1982 only one KM-103. Clearly, this one complex will not, as they say, make any difference. That means that even now it is necessary to give thought to ways for us to develop the thouandeer-brigade movement later.

"And there is still this question. At times a powerful longwall miner is out of commission because of a certain nut or piece of hose. Spare parts are needed, but there are not enough of them. It would seem that interruption of deliveries should be penalized more severely. The miner should receive on time that which is statutory under the norms."

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HOUSING SHORTAGE CAUSES PERSONNEL TURNOVER, LOW COAL OUTPUT AT DOBROPOLYE

Kiev PRAVDA UKRAINY in Russian 26 Dec 82 p 2

[Article by brigade leader V. Yerokhin: "Why the Rhythm Was Broken"]

> [Text] At the end of last year PRAVDA UKRAINY published the socialist commitments for the year of the breakage-face mineworkers brigade headed by V. I. Yerokhin, from the Belozerskaya Underground Mine of Dobropol'yeugol' [Dobropolye Coal Production Association]. Our correspondent asked the brigade leader to tell how the commitments were fulfilled.

Unfortunately, we cannot boast of special successes. We intended during the anniversary year to mine 10,000 tons of coal above the plan, to bring the workload at the mine face up to 1,700 tons per day, and, thanks to the thrifty use of materials and spare parts, to save 12,000 rubles. We did not reach these goals. Moreover, since the start of the year we have fallen in arrears by 11,000 tons of fuel.

In the last 4 months, beginning with September, our affairs have gone appreciably uphill in the world. We are doing everything possible to mine daily at least 2,000 tons of coal from the mine face during the remaining days of the anniversary year, which will enable us to cover the arrears that have been formed. This was referred to recently at a section meeting. Judging by the miners' statements--businesslike but disturbed--it was evident that all the brigade's members were extremely troubled by the situation that had been created. To clear the arrears in fuel by 30 December--that was the opinion of the collective.

In order to improve all the technical and economic indicators, the repair service at the section was reinforced, some of the hydraulic supports at the longwall that were worn and the control unit on the longwall mining machine were replaced; and the brigade's skilled craftsmen assembled an additional gas-suction installation at the mine face (we have 25 cubic meters of methane per ton of fuel mined) and improved working conditions and raised productivity appreciably.

Communists under secretary of the section's party organization, M. Bondarenko, who were dispersed in the most important production sections, exercised strict monitoring over the savings regime and the rational use of worktime. Such an operating regime permitted us recently to greatly improve, for example, the indicator for the saving of materials and spare parts.

It turned out that we were not at fault for the hitch. The tunnelers let us down greatly. At the beginning of the year they carved out too short a longwall--105 meters. Then they set about lengthening it to 155 meters. All this disturbed our work. In April we worked this longwall out and moved to one of 220 meters, which also proved to be poorly prepared.

The trouble is that the tunnelers do not manage to prepare new longwalls for the miners, to replace those that have been worked out. The lack of a breakage-face work front is the real bottleneck. Why? For a long time now the underground mine has been experiencing a shortage of tunnelers--right now they are short 200. Instead of the required eight brigades at the mine, there are only four. People do not stay long at tunneling because of various disorders in living arrangements. Many lads arrive from the army or come in on Komsomol work tickets from other republics of the oblast. While they are single they live in dormitories, but there is no place to go for those with families: the Dobropolye city ispolkom allocates almost no housing to the mine. Personnel turnover results. The mine could build housing by the in-house method, but UkSSR Minugleprom [Ministry of Coal Industry] is slow in allocating funds.

The rhythm is broken also by unsolved problems with mine machinery and equipment. This year, let's say, we supply a 220-meter longwall with a 160-meter KM-87 UM longwall miners. The unit turns out to have major factory defects and lacks the additional hydraulic sections. So many times we have asked the factory and the republic's Minugleprom to send us additional sections--but all in vain. The longwall was sent old, worn hydraulic sections, which involved the additional shipment of expensive timber for strengthening the mine face. This was reflected negatively in the prime cost for producing the fuel, and we were compelled to use an additional work force irrationally to reinforce the longwalls.

I am still hoping that we will overcome these difficulties and next year we shall make up the deficit. We undertook a high commitment--to mine 15,000 tons of fuel above the plan.

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KARAGANDA COAL MINE'S SOCIALIST COMMITMENT FOR 1983 SUMMARIZED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 31 Dec 82 p 2

[Article: "The Socialist Commitments of the Molodezhnaya Underground Mine Collective of Karagandaugol' [Karaganda Coal Production Association]"]

[Text] Blue-collar workers, engineers, technicians and white-collar workers of the Molodezhnaya Underground Mine, implementing the decisions of the 26th CPSU Congress and the 15th Kazakhstan Communist Party Congress, after mounting the drive, "60 Shock-Work Weeks for the 60th Anniversary of the Forming of the USSR," successfully carried out the socialist commitments adopted for 1982. The customers were sent dozens of trains of high-quality coal above the task, the mine's rated capacity was exceeded by 12 percent, and mine workers' labor productivity was 114 percent of the basin's average.

A new surge in political and labor activeness on the part of all miners was stimulated by the decisions of the November 1982 CPSU Central Committee Plenum and the 8th Session of the USSR Supreme Soviet. They have accepted as marching orders the principles and conclusions that ensue from CPSU Central Committee General Secretary Comrade Yu. V. Andropov's speech at the Plenum and his report at a solemn session, which was dedicated to the 60th anniversary of the forming of the USSR. In striving with shock work to intensify and multiply the successes achieved, the mineworkers take upon themselves the following socialist commitments:

To complete the program for the first 3 years of the five-year plan by the 66th anniversary of the Great October, and to carry out the annual plan by 22 December, based upon further intensification of production, increased coal-mining efficiency, the experience gained by the organization of socialist competition for a worthy greeting to the 60th anniversary of the forming of the USSR, and an active search for and involvement of internal reserves in the operations. To mine 30,000 tons of coking coal and to perform 100 linear meters of mine excavation above the task by the end of 1983. To provide for the operation of 3 longwalls with a workload of 1,000 or more tons per day and of two high-speed tunneling brigades with annual tunneling of 2,800 and 4,000 running meters, through a concentration of production, the scientific organization of work, wide use of advanced experience, and active participation in the "thousandeers'" movement.

In consistently reequipping mining operations, to carry out the plan for introducing new machinery, to continue assimilation of the 3 OKP-70 longwall mining machines, which provide for highly effective single-pass excavation of thick seams, to convert to the progressive conveyor delivery of coal to the south block of the

mine floor, and to put into operation jet pumps for cleaning settling tanks for underground water. To triple the mechanized mining of coal from thin seams, with a view to working the mine more completely, and to make rational use of fuel reserves.

We are doing everything possible to provide for high discipline and precise work organization in our collective. The basic principle of our life will be the motto, "Honor and glory for labor!" We are obligating ourselves to work without lagging elements. To expand the use of progressive methods for stimulating highly productive and high-quality work, and to cover two-thirds of the workers with the brigade form of organization and pay, with use of the coefficient of labor participation. To reduce nonproductive time losses by 10 percent. To include all sections, departments and brigades actively in the competition for award of the title, "Collective of Communist Labor."

Through improvement in the organization of preventive inspections and maintenance and through strict observance of the rules for operating mining equipment, to reduce the idle time thereof and to bring the machine-time coefficient for breakage-face longwall miners to 0.45. To provide for the reliable operation of in-mine transport, lifting installations and the operating complex at the surface, and to cut the time for loading railroad cars by 0.2 hour in comparison with the plan.

To create an environment of general motivation toward the economical expenditure of material, fuel and power resources, to save 50,000 kWh of electricity, 100,000 tons of fuel and 100 cubic meters of timber and lumber versus the established norms, and, by reducing prime production costs and by raising the quality of the fuel mined, to obtain 100,000 rubles of above-plan profit.

In realizing the plan for social development, to execute completely measures for improving the status of work protection and safety equipment, and production, cultural and living conditions, and to construct 1,030 square meters of housing by the in-house method. Attributing special importance to raising people's trade skills, to train 255 people in schools of advanced work methods and at courses for raising qualifications, to provide for full coverage of training in tekhnikums and workers' youth schools for youths who do not have a secondary education, and to raise the effectiveness of the miners' economic instruction. To raise the level of indoctrination measures within the collective, and to create conditions for completely adequate recreation and the large-scale involvement of workers in participation in physical culture and sports.

To continue socialist competition with the collective of the Stepnaya Underground Mine of the Karagandaugol' Association.

The mine's workers are investing all their efforts, knowledge and experience in successful fulfillment of the plan and of the commitments for the third year of the five-year plan and are making a worthy contribution to realization of the decisions of the November 1982 CPSU Central Committee Plenum.

The socialist commitments were discussed and adopted at shift meetings of the mine's collectives.

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UKRAINIAN COAL MINE ADOPTS SOCIALIST COMMITMENTS; PARTY'S ROLE EXPLAINED

Kiev PRAVDA UKRAINY in Russian 31 Dec 82 p 1

[Article: "High Discipline, Precise Organization of Work and Saving of Resources in Every Possible Way"; the passage rendered in all capital letters printed in boldface in source]

[Text] Socialist Commitments of Blue-Collar Workers, Engineers, Technicians and White-Collar Workers of the Order of the October Revolution Underground Mine 'Kommunist' of Oktyabr'ugol' [Oktyabr'skiy Coal Production Association] for 1983

In implementing the historic decisions of the 26th CPSU Congress, and, having entered the All-Union socialist competition for a worthy greeting to the 60th anniversary of the forming of the Union of SSR's, the mine's collective greatly overfulfilled its commitments. The plan for the first 2 years of the five-year plan was carried out 4 months ahead of schedule, the annual plan 2 months ahead of time. During the anniversary year 174,000 tons of coal above the plan were mined, and realized output was 3.6 million rubles' worth above the plan. All technical and economic indicators were substantially bettered.

The mine's collective has adopted the decisions of the November 1982 CPSU Central Committee Plenum and the principles and conclusions incorporated in the speech of CPSU Central Committee General Secretary Comrade Yu. V. Andropov at the CPSU Central Committee Plenum with great inspiration and enthusiastic approval. In striving to develop and strengthen the successes achieved in the anniversary competition and in sustaining the initiative of the Muscovites to promote a decisive drive to increase the labor efficiency of each worker, to raise the states of discipline and organization in all production sections, and to make full use of worker time, the mine's blue-collar workers, engineers, technicians and white-collar workers assume the obligation to fulfill the task for the first 3 years of the five-year plan by 15 August. In 1983 it is planned to mine at least 100,000 tons of anthracite above the plan and to realize added output of 2.15 million rubles. To provide for the fulfillment of established tasks by all sections and brigades.

To carry out the plan for labor productivity by 101.5 percent, based upon improvement of coal-mining technology, making more effective use of existing mining equipment, the introduction of advanced experience, and reduction in losses of worker time. To bring the workload per longwall up to 705 tons per day, and to have in operation one mine face that mines an average of at least 1,000 tons of coal daily. To reduce the ash content of the coal mined by 0.1 percent below the norm.

To provide for the timely preparation of the line of breakage faces, and to perform 100 meters of stripping and developmental mine-excavation work in addition to the plan. To save 60 tons of coal, 40,000 rubles' worth of materials, and 800,000 kWh of electricity by intensifying the thrift regime at each work place. To use repeatedly 300 tons of metal supports. To reduce the prime costs for producing 1 ton of coal mined by 22 kopecks below the plan, thereby saving 211,000 rubles. To make 400,000 rubles of profit. To introduce into production 130 rationalizers' suggestions with an economic benefit of 160,000 rubles.

To take measures to further improve the collective's social development, and to better the miners' working and living conditions. To raise the skill levels of 350 blue-collar workers, engineers and technicians. To include all workers for training in schools of communist labor and economic knowledge.

To intensify sponsorship assistance to the Zuyevka Poultry Breeding Sovkhoz. To weed 100 hectares of row crops, and to lay in 100 tons of green biomass.

To continue socialist competition with the collective of the Khartsyzskaya Underground Mine of Oktyabr'ugol'.

> The commitments were discussed and adopted at meetings of the mine's blue-collar workers, engineers, technicians and white-collar workers.

Comments of the First Secretary of the Khartsyzsk City Committee of the Ukrainian Communist Party A. A. Voshchenko

The collective of the Underground Mine Kommunist--a leader in Oktyabr'ugol'--approached the finish line of the anniversary year with good results: the annual program for mining coal was fulfilled ahead of time, and almost 200,000 tons of fuel were shipped to customers above the plan. And high technical and economic indicators have made the miners of the Khartsyzskaya Underground Mine, underground mines of the Ternopol'skoye Mine Administration, and the Underground Mine imeni 60-Letiya Velikoy Oktyabr'skoy Sotsialisticheskoy Revolyutsii happy.

Their experience should also help us to insure the successful work of all nine coal enterprises of the city during the third year of the 11th Five-Year Plan. It is from this standpoint that we are proceeding and planning ideological and organizational work for the future.

The mine Kommunist is a yardstick enterprise. Using this collective as an example, we shall be able, in the future, to teach others how to do the job in selecting and assigning personnel, executing indoctrination and solving economic problems. There is something to be studied here. Almost 80 percent of the workers of the teams, brigades, shifts and sections have a secondary specialized or higher education. Party groups are actively operating at all the main production sites.

The city party committee strives to insure that all that is valuable and progressive that the mine Kommunist does becomes the property also of other underground-mine collectives. Thus, a seminar was held this year on the topic, "On City Party Organization Tasks On the Propaganda of Advanced Experience and Work Methods at the Underground Mine 'Kommunist'." About 100 people took part--party leaders of enterprises of the coal and metallurgical industries, transport and construction. This

collective's practice of preparing "thousandeer" longwalls interested the city's miners. And we have created a school of advanced experience--up to 300 equipment operators and tunnelers of Khartsyzsk have already passed through the training here--based upon the mine.

The city party organization is keeping its eye not only on advanced workers but also on the laggards and on those who are middling. At the initiative of the Collective of Communist Labor of the mine Kommunist, we have constant right-flanker competitions right now, to acquaint neighbors with its progressive work methods. When we note that the work in one brigade or another of the association continues at the very same level, we analyze first of all the causes of this "stability." We pay the main attention to the collective's organization of work.

We are approaching violations of labor and production discipline and of socialist morals norms with ever-increasing exactingness. Indoctrination in communist attitudes toward work, participation with pride in the collective's affairs, and workers' honor is begun the day the worker arrives at the underground mine. Initially, the section chief, the brigade leader and the assistant director for personnel and living conditions hold conversations with those who wish to become members of the miners' family. If necessary, the newcomer is assigned to a mentor, for individual work with him. Councils of mentors and of preventive measures, which have been established at all the city's underground mines, play an important role in the indoctrination of young miner personnel.

The city's miners are enthusiastically supporting the patriotic initiative of the Muscovites and have resolved to compete during the third year of the five-year plan under the motto, "WE SHALL PROVIDE FOR HIGH DISCIPLINE, PRECISE ORGANIZATION OF WORK AND THE SAVING OF RESOURCES IN EVERY POSSIBLE WAY AT EACH WORKPLACE."

I would not like anyone to get the opinion that all the city's coal-industry problems have been solved. Not all association enterprises coped with the plans and socialist commitments this year. In some miners' collectives, timely preparation of the breakage face line was not provided for, the engineering and technical service was not up to par, and labor discipline was not satisfactory. Of course, the difficulties of establishing Oktyabr'ugol' are telling--for it was created only 1½ years ago.

In response to the decision of the November 1982 CPSU Central Committee Plenum, Khartsyzsk miners are investing all their efforts in seeing to it that work during the new year will be on the upgrade everywhere, so that the association will have no laggard mines or mining administrations. The task for the third year of the five-year plan--to mine 6 million tons of coal--will be resolved successfully.

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SELF-ADJUSTING COAL-CUTTER NOT BOTHERED BY ROCK INCLUSIONS

Moscow SOVETSKAYA ROSSIYA in Russian 22 Dec 82 p 6

[Article by E. Rakhmatullin: "A Generous Seam"]

> [Text] Bench tests of a new domestic coal cutter-loader were successfully conducted recently at the testing ground of the Institute of Mining Affairs imeni A. A. Skochinskiy. The machine is designed for excavating thin seams whose working is, as a rule, considered inefficient. The cutter-loader is guided by remote control by means of a manual console. But...certain control functions are carried out by the machine itself.

Before me are the brothers Vladimir Yevgen'yevich Aleksandrov and the younger one--Vsevolod. Both are working at Lyubertsy, in one of the laboratories of the Institute of Mining Affairs imeni A. A. Skochinskiy. At a most prominent spot in the laboratory hangs a photograph of their father, Yevgeniy Vsevolodovich, a remarkable person whose creative ideas are linked not only with mining affairs but even with the sea, and even with the sky.

It happens that there are people who transform two plus two into genius! Classical mechanics, after giving the world unforgettable possessions, has become out of style in our time. What are cogwheels if you have electronics in your pocket! And here Professor Yevgeniy Vsevolodovich Aleksandrov created a wonder for mechanics. For the sea, mining and space--some 80 inventions. One of his last ideas became, in a literal sense, a family development, which he left for his sons, it can be said, as an inheritance.

Says Vladimir Yevgen'yevich:

"I confess, today's coal cutter-loader does not entirely satisfy everyone who works on it. I have in mind the collective concept of the "combine" [cutter-loader] -- and it's a good one. But a superior one is necessary. This is a fact not only of production, but of social significance as well. Why? Because it is necessary to manage with the fewest personnel possible when excavating coal. Moreover, it is a basic task that has faced the designers of the cutter-loader for many years -- that is, to remove people completely from the workface and to completely automate the mine's underground activity."

Hard inclusions (simply rock) are encountered that exceed the coal's hardness severalfold. And when the machine runs into a hard inclusion, it either comes to a

standstill or something in it is broken because of the dynamic overload. This "something" more often than not is the cutter-loader's drive, its heart. Our father, in accordance with a ministry task, had undertaken to improve the drive.

Vladimir sketched on a piece of paper a "standard model" of an ordinary coal cutter-loader, its movements and operations....And a new sketch for comparison. He continued:

"Here it is, schematically. Our father's idea permits the cutting mode of the coal seam to be changed automatically, without the operator's participation. The cutting speed and the feed speed are linked synchronously and are changed only as a function of the resistance to cutting. The harder the rock, the more slowly the cutter-loader moves, but also the greater the rotating moment of the operating tool. It is this very synchronization of auger feed and rotating speed that gives the cutter-loader a so-called parametric stabilization mode. That is, regardless of the coal's hardness, the cross-section of the cuttings remains the same."

"Are there similar machines in world use?"

"No. But if you are talking about competition, then we have a new idea in reserve, but we have decided to begin in the laboratory (not only the director but also the minister supported us) from the first."

And Vsevolod Yevgen'yevich added:

"In all of today's cutter-loaders, when the operating tool--the auger--stops and the motor stops with it, even briefly, each part experiences an overload by virtue of inertia. The conclusion: added strength should be included in the calculations. for each part. From this also comes an increase in the machine's dimensions or the need for especially strong metals. Our father called for automatic protection against overloads in the design. We in the laboratory have brought the business, as they say, to the engineering level. We have named the developed coal cutter-loader the KAMI--cutter-loader with automatically changeable impulse. What are its features? If the auger stops, its drive automatically converts the electric motor to an idling mode for the required duration.

New wonders from mechanics?

If you like, yes. It is also a fact that especially valuable metals are saved. The additional strength designed for the overload during stoppage of the operating tool is not needed. There is also a reduction in the machine's dimensions, which is so necessary for the effectiveness of any underground equipment. And there is still another plus. The feed part of today's cutter-loaders is, as a rule, a most expensive hydraulic device. But our father found that this component can be left out of the design. Suffice it to say that the output shaft of the impulse-lever drive from the sprocket feed and the machine "becomes wiser"--it moves, now more quickly, now more slowly: its speed is determined by the hardness of the rock. In other words, it is as if the machine controls and saves itself. That's mechanics for you.

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COAL

ANGREN STRIP COAL MINE, CENTRAL ASIA'S LARGEST, BEING READIED

Baku VYSHKA in Russian 28 Oct 82 p 3

[Article by TASS correspondent A. Skorobogatov (Angren, Tashkent Oblast): "The Great Coal of Angren"]

[Text] The Angren Strip Mine in Uzbekistan is to triple the mining of raw materials. Its inexpensive coal soon will be needed by Angrenskaya GRES-2, of 2.4 million tons capacity, which is under construction.

Back in the 1930's the blacksmith of the native village that stood on this spot traveled 100 kilometers to Tashkent by oxcart to get coal. There they imported fuel from the Donbass [Donets Coal Basin]....

Today, on the site of the village, whose residents have been moved to a well-arranged settlement in a fertile valley, the enormous bowl of the largest strip mine in Central Asia has been opened up. Day and night the thunder of explosions, the noise of the excavators, and the staccato of the knocking of the electric railroad are never silent.

Uzbekshakhtostroy [Uzbek Mine Construction Trust] is working simultaneously on almost 20 facilities. A large plant for the repair of mine-transport equipment, a hydraulic preparation plant with a capacity of 900,000 tons of coal per year, and a motor pool are being erected, and new roads and railroads are being laid down.

Simultaneously, the fuel-mining front is also being enlarged. For 5-6 cubic meters of soil must be moved to get a ton of coal. It is not difficult to figure out how much stripping work must be done to triple mining volume. And here is the stake--for reequipping the enterprise with machinery. Along with the 10 cubic-meter excavators that are already operating at stripping work, rotary units of great productivity that are being manufactured for Angren's miners by Donetsk's machinebuilders will be used. The coal will be sent out entirely by new, high-capacity electric-traction units and by giant dump trucks made in Belorussia.

The significance of Angren--one of the largest fuel and power bases in Central Asis--is growing.

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COAL

BEST USE FOR KIRGHIZIA'S HIGH-ASH COAL DEBATED

Frunze SOVETSKAYA KIRGIZIYA in Russian 3 Feb 83 p 2

[Article by K. Rakhimov, Kirghiz SSR distinguished power engineer: "But if Gradually?"]

[Text] SOVETSKAYA KIRGIZIYA has already raised the question of the wide use of coal of the Kavak Basin, which includes the Kara-Kiche, Min-Kush, Tura-Kavak, Kok-Moynok, Kashka-Su and Agulak fields.

But for more than a decade now there has been talk about the various methods for bringing these fields into active use. There are designs for developing them. It has been proposed that a railroad be built from the town of Rybachiy to Kara-Kiche for each of them. But the cost would be excessive. Another variant proposes to burn the coal at high-capacity thermal electric-power stations, to be built here, on the spot, and then to transmit the power.

There are also these suggestions: process the coal into gas, liquids or semicoke. In brief, the problem of Kara-Kiche is a transportation problem.

Power-engineering utilization of the coal, although it is promising, still has not found wide application. True, the technology for processing Kansk-Achinsk coal is now being developed. It is more suitable precisely because of its high ash content. But to what extent this technology is justified for Kara-Kiche is a major question.

In our view, it is not economically advantageous to use the coal locally for obtaining electric power. The fact is that during the current five-year plan Central Asia's Amalgamated Power System (OES) will be hooked up to the USSR Unified Electric-Power System (YeES). Ekibastuz electric-power stations will become the junction point for the OES and the YeES. They will surpass the TES, whose construction in Kara-Kiche has been suggested, in all indicators.

Then what is to be done with this coal? For the republic does not have enough solid fuel, especially in its northern part. Coal is being imported over thousands of kilometers from Karaganda and the Kuzbass [Kuznetsk Coal Basin]. It is planned later to ship it from Ekibastuz. But that is brown coal with an ash content of 30-40 percent (the ash content of Kara-Kiche coal is 9-10 percent). Thus, more than a third of the imported fuel would be ash.

What do we want to propose? First, designs that call for the excavation right away of a large amount of coal (3-4.5 million tons per year) must be reexamined, with a view to scaling them down. It is recommended that development be increased

about 2-fold to 3-fold in comparison with current mining (180,000 tons) in the very near future. Such an amount of fuel can be exported by automotive transport to the farms of all rayons of Naryn Oblast, the Issyk-Kul region and the western part of the Chuyskaya Valley. The coal will be shipped by truck from the Rybachye Railroad to a distance of up to 350 kilometers. The radius of export from Kara-Kiche will be almost 100 kilometers less. The mining can be increased gradually, year by year.

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REPAIRMEN CREDITED WITH SUPPORTING HIGH COAL-MINING RATES

Kiev PRAVDA UKRAINY in Russian 17 Nov 82 p 1

[Article by N. Litvinenko (Donetsk): "The Repair Shift"]

> [Text] Miners of the Underground Mine imeni Gor'kiy of Donetskugol' [Donets Coal Production Association] are conducting a labor drive in shock-work fashion in honor of the 60th anniversary of the forming of the Union of SSR's. Since the start of the year they have sent 135,000 tons of fuel above the the task to customers.
>
> The collective of the brigade supervised by N. F. Belinskiy is making an especially meaningful contribution to the successful fulfillment of its socialist commitments. It has on its account more than 15,000 tons of "black gold" mined above the plan. Our story tells how the miners managed to achieve these successes.

Walking to their next detail, the miners stopped at a festively executed "Molniya" that had been hung out at an enterprise's public entrance. On it were warm words of greeting to the coal miners of Nikolay Fedotovich Belinskiy's brigade, which had established in recent days a record work result at a thin seam: under a plan for 225 tons it had sent 340 tons of fuel to the surface. Altogether, in recent months the collective had sent customers 260-300 tons of coal daily.

"It was not always like that," says mine director V. I. Prishchepa. "The roof at seam N-7 is weak. About 2 years ago there were partial slides. Obviously, the coal miners' difficulties and nonfulfillment of the plan came from this. The section's engineers and technicians under chief M. I. Kukash then proposed to authorize a new type of timbering. But it is one thing to propose it--another to introduce it. Belinskiy's brigade implemented the new design authorization. Now they breathed easier in the section: there were no slides.

I went to the underground mine with the brigade leader and the repairmen. From the ground to the roof was little more than a meter. That was the thickness of the seam. Quick-moving spots of reflected light in pitch darkness at a depth of half a kilometer, the rays of electric lights bouncing around, illuminated rows of powerful hydraulic roof supports.

For six men to prepare the 110-meter longwall for operation--it is not a simple matter. But the repair shift includes the most qualified miners--yes, even the

brigade leader, more often than not, is with them--and repair workers. Indeed, replacements do not take over the shift. It happens that the longwall must be shortened, or added to. Now a cutter-loader is out, now a conveyor is jammed with coal dust, somewhere the roof is weak. The brigade leader provides an example for all: he lifts the mood of one with a joke, he helps another, while--and this also happens--he "chastizes" a third if something is not right. No one murmurs here: we are being busy here, while someone is mining a chunk of coal. That is why he gets the repair element to support all the shifts reliably. One thing is a joy for all: when they receive the challenge banner for fulfilling the plan for the first three quarters ahead of schedule, and when they receive a certificate and a bonus, as they are now, for those days during which the brigade sent to the surface more than 100 tons of coal above the plan.

Observance of the preventive-maintenance schedule is the holy of holies. The machinery here is never operated to the point where it is worn out. And, if a breakdown occurs, it is eliminated in minimum time. If someone happens to be better at something, the brigade leader entrusts his comrades to carry it out. Let's say that Nikolay Zavodchikov loves machinery and can disassemble and assemble an IK-101 cutter-loader blindfolded. Because of this the replacement of oil and gears, examination of the main components, and testing of the machine in operation are rapid. Anatoliy Chinkov copes well with preventive maintenance of the SP-63 conveyor. Experienced miner Vasiliy Ostapenko performs any operation excellently, even such a difficult one as fastening of the cutter-loader and the head in an upper recess or fastening of the drive and tension heads. Each repairman can replace a comrade, either on a support or on a cutter-loader. This saves time.

"Absolutely everything is important in the work," says Belinskiy with conviction, "but most of all knowledge. In our brigade almost all the mining technicians have finished either a mining-industry school or cutter-loader operator courses."

Another hour still remained before the end of the shift, and the repair workers had already made a trial test of all the equipment. Some minutes went by, and coal shot with a blue color lay on the transporter's belt.

"And so write," said the brigade leader, "that the repair shift provided for stable and highly productive operation by the miners, from the first days of the 11th Five-Year Plan. In other words--for the mining of 300 tons of coal daily from the longwall."

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WAYS TO IMPROVE KARAGANDA UNDERGROUND COAL MINING IN 1983

Moscow PRAVDA in Russian 9 Dec 82 p 1

[Article by Yu. Razgulyayev (Karaganda Oblast): "Restore the Former Glory"]

> [Text] Everyone dreamed about mining the 500,000th ton of coal since the start of the year at V. Belik's section of the Underground Mine imeni Gorbachev. Some even joked: "If necessary, we will even chop with the pneumatic drills." But P. Chekmarev and his comrades were the first to cross the cherished goal line.

"This shift was in no way different from the others," recalls the brigade leader. "We descended to the longwall, took our places, the operator turned on the cutter-loader....But in the morning, up on top, nearly the whole mine greeted us...."

For the sections of this underground mine, the annual half-million goal is not a rarity. During the 10th Five-Year Plan alone this level had been reached nine times, by various sections. But the victory of V. Belik's collective was a special case. The fact is that last year it also took on a commitment to mine 500,000 tons of coal. It took it but did not keep its word. It can be explained now, of course, by the fact that the wrong longwall miner had been supplied and that spare parts were not always supplied with precision. This did not lessen the bitterness of the defeat.

Everyone prepared thoroughly for the new assault. The brigade's composition was reviewed, and the teams were strengthened with communists. Special attention was given to the repair shift: for, given the current level of mechanization, much depends upon precision operation of the machinery.

If this victory is broken down by the day and by the step that led to the half million tons, then one finds that each day the section sent more than 1,500 tons of coal to the surface. That is almost double the average for Karagandaugol' [Karaganda Coal Production Association]. The contribution of the "half-million achievers" to the basin's total mining is substantial. The 18 sections that are included in the competition to achieve this high goal comprise about 15 percent of all production units. But they yield more than a fourth of the coal, and during the best months this share reaches almost 30 percent.

Of course, not every longwall can yield half a million tons. But if the daily productivity at them can be raised by even a thousand tons, then the association will

increase mining by 2.5 million tons per year. The sections in the basin that are planning to make commitments for the "thousand goal" number 68.

The number of brigades achieving "thousand" in the basin has grown steadily since 1970. And, just as steadily, underground mining has increased. In 1977, 84 longwalls at Karaganda's underground mines gave a thousand or more tons per day. It is consistent that it was that year that the basin reached its underground mining peak.

But later an abatement appeared. By end of this year, only 57 of the "thousand achievers" had carried out their commitments. And work on the so-called "unplanned" days, actually days off, helped mining growth but little.

"Objective causes are telling here," explains N. Drizhd, general director of the Karagandaugol' production association. And on a notepad he writes: depth, gas, equipment.

Yes, each year the depth of the coal horizons increases. And the fact that the Karaganda seams are considered to be among the richest in gas and most explosion-prone, cannot be denied. And yet...17 sections from various mines have undertaken the commitment to mine at least 500,000 tons of coal.

I say right off: not all of them are operating today at the planned level, and some will owe the state. Thus, perhaps the general director is right: such a workload is not for Karaganda?

At the Sokurskaya Underground Mine we converse with V. Nazarov, whose section is falling short of its commitments by more than 70,000 tons. This conversation is not, of course, easy. There is little joy in admitting mistakes--one's own or others'. And in this case it was engineering miscalculations, a lack of skill in considering the actual conditions, and simply being inattentive to people who have voluntarily taken upon themselves the difficult burden of an increased workload that led to the initiators' starting to lag. Thus, V. Nazarov and his comrades were compelled to stop the cutter-loader simply because the neighboring section, which was working under a slower regime on the same seam, had not had time to prepare a longwall. But they should advance synchronously. And now the "five-hundred thousand tonners" stand idle a month, and a second one, and the mine's managers are not very upset about it. Yes, and even the association simply recorded that fact in the monthly summaries. And one can understand Vyacheslav Mikhaylovich when he said with bitterness that next year scarcely anyone wants to travel their path.

V. Nazarov, among others, is operating a KM-130 longwall miner, of which there are not many yet in Karaganda. His boys have had a fair amount of trouble with the unit. But A. Nikolayev's section from the Underground Mine imeni 50-Letiya Oktyabr'skaya Revolyutsiya has already, in the second month of mastery of its "steel assistant," mined 80,000 tons with it. How he did this is a special question. But indeed, much of what today is slowing the Sokurskaya miners was, for the advanced section, a passing stage. Why didn't they make use of the experience?

One of the causes, the miners themselves think, is the formalism in its dissemination. It would, of course, be incorrect to assert that such work is not being done within the association and at the underground mines. Various conferences and schools of advanced experience are held. "But the miner," A. Nikolayev considers,

"often wants to feel the 'iron' himself, to have a talk with his colleague, to work in the brigade." He himself is doing that. Before mastering the new complex, on his own initiative he went with his comrades to the Underground Mine imeni Kostenko, and he "felt and discussed." And now no one passes him when he reaches the highest output rate in the branch.

For the third year in a row, almost the same number of "thousand" and "500-thousand" achieving collectives were named in the Karagandaugol' Association. Well, then, have the reserves been exhausted?

"We, for example, could have increased the number of these collectives," First Secretary of the party's Shakhtinsk city committee N. Davydenko does not concur. He himself is a former director of an underground mine, an experienced miner, and he is deeply upset by the fact that the number of sections working with the higher workload has fallen here to one-half. "It was discussed with the communists, and they proposed to increase the number of thousandeers. But the association does not agree...."

Is this playing safe? Indeed, signing an agreement with all the collectives that want to compete for increased output adds to the bother. The enthusiasts must be provided with machinery and metal, and competition must be organized....

The Karaganda Basin has the highest level of breakage-face work mechanization. Practically all the underground mines were designed for work with longwall miners. However, the miners' "steel plating" wears rapidly under the ground, and there is not always a replacement for it. During the last five-year plan, for example, only 178 supports were obtained out of 235 requested. Right now, while this ratio has been changed, it is precisely for the worse. The miners here are correctly reproaching USSR Minugleprom [Ministry of Coal Industry]. At the same time, internal reserves are not being used completely.

For the sake of correctness, I would like to mention that the Karagandaites do, of course, have some good things going for them in organizing the competition for increased workloads. Let us recall: with all its objective and subjective faults, the basin remains a leader in many indicators in the branch, including the average daily mining of coal from one longwall. Many underground mines are working excellently. Back in November, for example, the Molodezhnaya mine reported that it had fulfilled the annual task. And three longwalls achieving "thousand goals" made the greatest contribution to this victory.

Nevertheless, a fact remains a fact: underground mining in the basin has for several years now become bogged down to the point even of falling. This cannot help but worry the Karagandaites.

At the start of the five-year plan, at the miners' initiative, a competition was started under the motto, "Restore the former glory of the basin." Wide development of the movement to achieve the "thousand figure" is the true path to this goal.

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PRODUCTION OF GIANT COAL-MINE TUNNELER HALTED BY LACK OF CUTTER BITS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Jan 83 p 2

[Article by V. Zakharchenko (Donetsk, Yasinovataya, Moscow): "Gulliver on Paper Bonds"]

[Text] The whole 200-meter bay of machinery-assembly department No 4 was filled up completely with semifabricated multiton items. It is difficult to get between them. What is this? The usual crash work at the end of the year, when there is a hurry to collect more machinery? No, these are sections of just one machine. But what a machine! It is 40 meters long, 5 meters high and weighs 280 tons. Properly speaking, this is not even a machine but a whole mine-tunneling complex, to which its builders have given the name, Soyuz.

The complex's productivity is like its dimensions. It can penetrate 22 meters of solid rock per day, leaving behind an excavation more than 20 square meters in cross-section. For comparison, let us say that the ordinary blasthole method penetrates a maximum of 60 meters per month in the same rock.

Such an underground giant, which is unheard of in our coal industry (yes, and even abroad there are few counterparts), is being erected at the Yasinovataya Machinebuilding Plant, in the Donbass [Donets Coal Basin], in accordance with a Dongiprouglemash [Donetsk State Design, Development and Experimental Institute for Coal Machinery] design. A laser ray will indicate the direction of its movement underground. The complex is equipped with remote control, an indicator system and similar means for automation that were developed at another Donetsk institute--Avtomatgormash [Institute for the Automation of Mining Machinery]. The experimental model, a little smaller in size, was tested successfully 4 years ago at the Underground Mine imeni Aleksey Stakhanov. After which an interagency commission recommended manufacture of a test lot.

In 1979 an engineering task was published, signed by 15 supervisors of the interested organizations which designed and fabricated the complex. The Yasinovataya Machinebuilding Plant was named the basic manufacturer. A precise date for completion of the work--the fourth quarter of 1981--was set.

With this, the prehistory can be ended and the history begun--a long, drawnout proceeding about a specially built machine. No one questioned the established deadlines. And the drawings (complete for the whole complex) were delivered on time to Yasinovataya by truck (they simply would not fit in a car). But the plant undertook

no operations either in 1980 or the next year. And only when the original deadline had expired, in the first quarter of last year, was the complex finally put into production.

And then events took an entirely unexpected turn. At the end of November First Deputy Minister of Heavy and Transport Machinebuilding R. Artyunov requested superior organs to move the deadlines for manufacture to 1983. In so doing, there was not a word about the fact that the original deadline had already been broken, and the fact that, even today, the machine's readiness does not, to put it mildly, inspire confidence. Then a new cause for postponement was cited: "because of the large amount of work in Minkhimmash [Ministry of Chemical and Petroleum Machine Building] in the manufacture of rotary cutter bits."

Then the matter of the rotary cutter bits--the cutting tool for the Soyuz-19U--was really set back: Minkhimmash's Drogobych Bit Plant flatly refused to make them. Perhaps the order for the enterprise was a surprise? Not at all. Back in 1980 authoritative organs decided with precision: manufacture of the cutting tool for the complex was the responsibility of the Drogobych plant. Nevertheless, the machinebuilders have not been preparing to carry out this task. Fruitless correspondence between Yasinovataya, Moscow and Drogobych dragged out for long months.

V. Pavlov, chief of the VPO Soyuzneftеprommash (All-Union Production Association for Petroleum-Industry Machinebuilding], to which the Drogobych plant belongs, reported in response to a routine inquiry by Yasinovataya: "The manufacture of the above-mentioned tool (the cutter bit) will be started by Minkhimmash in 1987, after new capacity is put into operation." The "new capacity" is a special department that will be built during the next five-year plan for equipment for coal-industry workers, and it is intended for series production of Soyuzes. This still refers only to one complex, for which not so many cutter bits are required.

Only after the intervention of the USSR Council of Ministers, the First Deputy of the Ministry of Chemical and Petroleum Machine Building A. Rutskoy reported that it was decided to transfer the order to another enterprise--an experimental plant of Minkhimmash. It is true, it is not the cutter bits themselves that will be manufactured, but only the cutting disks for them, which, of course, are far from being one and the same thing.

In Yasinovataya it was even thought at first that this was a slip of the pen. But in any case Moscow had been sent the complete drawings for the whole cutting-tool assembly. In two weeks the complex's chief designer and a representative of the Yasinovataya plant left for Moscow. However, their meeting at Minkhimmash with K. Kuznetsov, deputy chief of Soyuzneftеprommash, did not produce anything.

"Yes," Comrade Kuznetsov confirmed, "we shall make only the discs. Moreover, you still have not sent the drawings...."

But when it was suggested that he take a spare set with him, he refused to do so: we shall wait until they come by mail....But the main thing is, K. Kuznetsov categorically refused to name any specific dates for manufacturing the disks, declaring that "it is necessary to think" about it.

Right now the Yasinovataya plant is posing the question this way: well, good, we shall manufacture the complex, but who will buy our machine without cutting tools?

What can be said to be the cause of this whole story? The case is, in general, alas, not an exceptional one. In mastering new equipment, as a rule, enterprises of several branches of the economy take part. And the success of the matter depends above all upon their coordinating actions and on the precise execution by all partners of their responsibilities.

As we have seen, in the given case there is no shortage in the instructions and decisions of the officials. There is a lack of something else--a genuine responsibility for fulfilling decisions that have been made. That same most high responsibility for the observance of statewide, not parochial, interests that was mentioned at the November 1982 Party Central Committee Plenum. Only here it is necessary to seek out the reason that the underground Gulliver became entangled in paper bonds on the road to its workplace in the underground coal mine.

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BRIEFS

YAKUTIA'S COAL-MINING EQUIPMENT--An article that was published under this headline ["What to Take Yakutsk Coal With"] in SOTSIALISTICHESKAYA INDUSTRIYA of 7 July this year raised the question of the necessity for improving equipment for mining fuel in South Yakutia. Among other things, the Ministry of Electrical-Equipment Industry was criticized for the unimproved design of electrical equipment for Uralmash's EKG-20 excavators. The newspaper correctly revealed the causes of the excavators' unsatisfactory operation, reported I. Karasev, deputy chief of the Technical Administration of Minelektrotekhprom [Ministry of Electrical-Equipment Industry] in an official answer to the article. This question was examined by the ministry's board, and a plan of measures aimed at increasing the reliability of the electric drives and other electrical equipment was approved. For this purpose, a set of thyristor control drives was modernized and installed on EKG-20 excavator No 1. Drives of the new configuration will be delivered to the erecting site at Neryungri and installed on machines: six before the end of the current year, and six next year. They will completely replace the electrical equipment of obsolete design. Chief of VPO Soyuzpreobrazovatel' [All-Union Association for the Production of Converters] Yu. Zakharov and director of VNIIeleketroprivod [All-Union Scientific-Research and Design-Development Institute for Automated Electric Drives in Industry, Agriculture and Transport] M. Yun'kov have been instructed to complete, before the end of this year, manning of the support center that has been established in Neryungri and also to provide it with setting-up and research stands. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Oct 82 p 2] 11409

KRIVOY ROG STRIPPING TECHNOLOGY--Krivoy Rog--The section for cyclic flow-line technology, which was put into operation ahead of schedule, will be capable of sharply increasing the pace of stripping work at the Central Mining and Concentrating Combine of Krivbassrud [Krivoy Rog Ore-Mining Association]. Its erection enters organically into the plan for rebuilding enterprises and providing for a substantial increase in production volume. A high-powered crushing unit, a spreader, a 20-cubic meter excavator and conveyors that total amost 5 kilometers in length are in operation at this section. Cyclic flow-line technology has been introduced into the Krivoy Rog Basin for the first time. The specialists have recommended that it be used at all the basin's mining enterprises. [L. Teushchakov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Jan 83 p 2] 11409

KUSHEYAKOVSKOYE FIELD STARTS MINING--Novokuznetsk--The mining of fuel has started at the Kusheyakovskoye field. A large section of the Nagornaya Underground Mine of Gidrougol' [Association for Hydraulic Coal Mining] has been turned over for operation here. Complete mastery of the mechanized mine face has been assigned to the brigade of Hero of Socialist Labor Aleksandr Nikitin. The collective's high labor

discipline, experience and mastery have enabled a yield of 1½ to 2 thousand tons of coal since the first working shifts, which greatly exceeds the daily task. [TASS] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 22 Jan 83 p 1] 11409

COLD-WEATHER WELD RESISTANCE--Yakutsk, 2 Feb--A new method for welding large dimension parts of heavy earthmoving equipment and heavy-load dump trucks that was developed by scientists of the Cold-Resistance Section of the Yakutsk Institute of Engineering Physics for Problems of the North will enable the Neryungri Strip Coal Mine collective to save up to 2 million rubles per year. Excavators with bucket capacities of 12.5 to 20 cubic meters and dump trucks of 120 and 180 tons of load capacity are being used at the strip coal mine. The reliability of their operation during very cold weather depends greatly upon the quality of welded joints. Yakutsk scientists have developed a number of recommendations for the Belorussian Motor-Vehicle Plant and the Uralmash Plant about raising the operating capability of components and assemblies of machinery that is to be used under the severe conditions of Yakutia. This collaboration is being accomplished within the framework of the integrated specific-purpose Sibir' program. [PRAVDA stringer V. Tarutin] [Text] [Moscow PRAVDA in Russian 3 Feb 83 p 1] 11409

HIGHLY MECHANIZED UKRAINIAN MINE--The large, highly mechanized Zapadno-Donbasskaya Underground Mine No 21/22, with a capacity of 1.5 million tons of coal per year, was put into operation on the eve of the 60th anniversary of the USSR in Dnepropetrovsk Oblast. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 4, Jan 83 p 4] 11409

LASER MINING-MACHINERY GUIDANCE--Kharkov, 31 Jan--Laser instruments created in Kharkov in collaboration with Leningrad scientists will help the miners to develop coal fields more quickly. Today the output of the first series of a lot of such devices, which are intended for mines of the Kuznetsk, Karaganda, Donets and Pechora basins, have been completed at the Plant for Precision Instrumentmaking. A laser tube attached to the chassis of a mining cutter-loader indicates continuously to the operator with its beam the correct course for driving a tunnel or for cutting a longwall of coal. As a result, the machines lay a path to the fuel seams at an accelerated pace and increase mining of the coal, reducing, at the same time, the excavation of useless rock. The new items also have been adapted for safe operation in the environment of the natural fuel gases that are encountered in mines. The electrical contacts of the light projector, between which sparks can "slip," have been insulated reliably with a sealed steel housing with double walls. The telephoto lens, of original design, effectively converts dispersed light into a concentrated beam which reduces electrical consumption to a minimum. [TASS] [Text] [Moscow PRAVDA in Russian 1 Feb 83 p 2] 11409

MINING PROGRESS AT NERYUNGRI--Neryungri--Three years have passed since the day the Tynda-Berkakit-Ugol'naya railroad line was put into use. During this time about 6.5 million tons of coal for thermal and electric-power enterprises of Siberia and the Far East have been shipped from the Neryungri Strip Mine. By the 60th anniversary of the USSR, a second phase of the strip mine, with a capacity of 2.5 million tons of fuel, had gone into operation. The Workers' Relay helped in carrying out successfully a most important item of the pre-anniversary socialist commitments. The collectives of all interdependent subunits that are erecting the various facilities of this large and complicated complex, which is due for early startup, participated in the competition. It included Yakutuglestroy [Combine for the Construction of Coal-Industry Enterprises in Yakutia], Yakutugol' [Yakutia Coal Production Association] and enterprises of USSR Minenergo [Ministry of Power and

Electrification], Mintransstroy [Ministry of Transport Construction] and USSR Minmontazhspetsstroy [Ministry of Installation and Special Construction Work]. This year a third phase, with a productivity of 4 million tons of coal, is to be put into operation. And by the end of the five-year plan, the Neryungri Strip Mine will reach full capacity and will ship 13 million tons of excellent coking coal each year. [L. Rybakovskiy] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Jan 71 p unknown] 11409

GUKOVO MINERS' BRIGADE BOASTS--Gukovo, Rostov Oblast--A couple of days ago the integrated brigade of mineworkers of the Underground Mine imeni 50-Letiya Oktyabr' (of Gukovugol' [Gukov Coal-Production Association]), which is supervised by Hero of Socialist Labor K. S. Markelov, reported the fulfillment of commitments for the anniversary year ahead of time. Having been included in the All-Union socialist competition in honor of the 60th anniversary of the forming of the USSR, it mined 1 million tons of coal during the first 11 months of the year. The average annual workload for the mechanized complex exceeded 3,000 tons. The prime production cost of the coal was reduced by 86,000 rubles below the plan. The brigade's collective mastered the modern mining equipment to perfection and, over a period of many years, increased the mining of fuel each year and strove persistently for the million-ton goal. This result became possible thanks to the workers' high skills, precision in organizing the work and the mutual operations of all elements of production, and bold engineering support. The brigade's collective committed itself to make the established record the norm throughout the whole 11th Five-Year Plan period--to mine 1 million tons of coal each year. [M. Ovdiyenko] [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 51, Dec 82 p 5] 11409

CSO: 1822/143

PIPELINE CONSTRUCTION

URENGOY-NOVOPSKOV GAS PIPELINE GOES INTO OPERATION

Moscow IZVESTIYA in Russian 3 Feb 83 p 1

[Article by V. Il'in: "From the Arctic to the Donbass [Donets Coal Basin]"]

[Text] A new gas pipeline has gone into operation.

And finally, that which they had waited for and had hastened with shock work was completed. Production tests on the last, 267-kilometer segment of the Urengoy-Novopskov transcontinental arterial were completed. Prior to this, half a year ahead of time, laboring collectives of Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] had put the remaining segments of the 3,346-kilometer gas pipeline into operation. So now the whole gigantic arterial for "blue fuel," from Arctic Tyumen to the coal rock dumps of the Donbass has gone into operation.

Hundreds of small and large rivers, dozens of roads and railroads, and ravines and gullies were crossed....Now, when all the difficulties have been left behind, those who had done especially excellently can be named. There is Viktor Madenov, who was in charge of an insulating and pipelaying column. This collective completed the erection of its sector of the gas pipeline in record time. Working on a concentrated schedule, the route workers laid 150 kilometers of large-diameter pipe. Such a pace had not been known previously in West Siberia!

Arshad Fatullayev's brigade was constantly among the socialist-competition leaders in Administration No 59 and in Severtruboprovodstroy [Trust for Pipeline Construction in the Northern Economic Region]. It manufactured weights for the pipelines. Last year alone the collective had produced more than 20,000 of them. The workers' collectives of the flow-line groups of A. Buyankin from Mosgazprovodstroy [Moscow Gas Pipeline Construction Trust], V. Kushka from Soyuzgazspetsstroy [All-Union Trust for the Construction of Special Gas-Industry Facilities] and G. Agdadzhanyan from the Transcaucasus Pipeline Construction Administration were models of highly productive work.

The Siberian weather presented no few surprises to the builders. When everyone had been expecting hard freezes that would make the abominable swamps trafficable, even for heavy equipment here in the Ob swamps, autumn did want to cede its rights for a long time. Only light, wet snowfalls came, and again there were rains--lengthy and interminable.

The sector where Kazymtruboprovodstroy [Kazym Pipeline Construction Trust] worked was called a "swamp" in the surveyors' notes. Actually, a taiga lake 5 or 6 meters deep that stretched for several kilometers in length and width unfolded before the builders. How was pipe and equipment to be delivered here? By air, by helicopter? But indeed, even a helicopter needs a place to "land." And where was freight to be unloaded and stored?

Kazymtruboprovodstroy Chief Engineer S. Aleksandrov was at the sector day and night. He and the most experienced route workers examined literally every meter of the surrounding locality. They searched for the slightest possibility for continuing the operations. In vain. What was to be done? It was as if nature were having a laugh on the builders. Where, from time immemorial, -40 to -50 degree temperatures had raged, now the thermometer's column of mercury scarcely ever dropped below the 10-degree mark. Meanwhile, the deadlines specified by the high socialist commitments that the route workers had taken upon themselves were approaching, and still there was no freeze.

And then an idea was born. What if reinforced, multiple-layer log roads, like superstrong rafts, were laid down on which all the equipment would be placed! But this would require strenuous efforts of all, of each member of the collective.

Meanwhile, production tests had been completed along the entire gas pipeline route. One after another, sectors of the arterial were put into operation, augmenting the energy balance of the Central, Southern and Ural Economic Regions and connecting up with the country's Unified Gas-Supply System.

But only on the sector between the Kazymskaya and Uzyum-Yuganskaya Compressor Stations was the stubborn struggle continuing with the swampy lake. Everyone and everything that could help the builders--advice, people, equipment--came to the builders' aid. P. Shabanov, manager of Severtruboprovodstroy, and A. Moiseyenko, chief engineer of Priob'truboprovodstroy [Pipeline construction Trust of the Ob Region] spent all day and night on the sector.

And they came out winners. The sector was put to work earlier than the planned deadlines. The Urengoy-Novopskov gas pipeline, the third of six planned for the current five-year plan, is operating!

11409
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PIPELINE CONSTRUCTION

BUILDING PACE QUICKENS ON URENGOY-UZHGOROD GAS PIPELINE

Builders Speed Up Pace

Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 83 p 4

[Article: "The Trunk Pipeline Builders Speed up the Pace"]

[Text] The Urengoy-Pomary-Uzhgorod gas trunk pipeline is 4,451 kilometers long. The builders took on a commitment last year to lay 1,500 kilometers of the linear portion of the line. As a result of large-scale competition, 1,851 kilometers of finished trunk pipeline had been built by 1 January 1983.

Collectives of Glavtruboprovodstroy [Main Administration for Pipeline Construction], Glavvostoktruboprovodstroy [Main Administration for Pipeline construction in the Eastern Economic Region], Glavukrneftegazstroy [Main Administration for the Construction of Oil and Gas Industry Enterprises in the Ukraine] and Glavyuzhprovodstroy [Main Administration for Pipeline Construction in the Southern Economic Region] especially distinguished themselves last year.

Thirty-eight flow-line operating groups are working on the route. The collectives of the flow-line groups of A. Pen'yevskiy, L. Mikhel'son, V. Maslakov, A. Buyankin, V. Radchenko and V. Belyayev achieved the best indicators in the past year.

The main task for the approaching year is to complete construction of the entire linear portion of the arterial in the first half of the year. Seventeen top-priority compressor stations are to be put into operation before the end of the year.

Today we publish reporting by our correspondents from the two extreme points of the route--the start and the finish.

Integrated Gas Treatment Facilities

Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 83 p 4

[Article by V. Dubrovin (Novyy Urengoy): "At the Sources of the Gas River"]

[Text] The road between the oilfield facilities is moving increasingly farther along the swamps and marshes. With the onset of freezing weather it has become

completely reliable, and the work pace has risen. Neither arctic cold nor snow drifts have for a minute interrupted the rumble of the over-the-road tractors, bulldozers, special vehicles, buses that haul the rotating-duty workers, and excavators. An agglomeration of fire and flash of electric welding, now to the left, now to the right of the road, breaks the wan looming of the arctic night.

"The builders of Urengoytruboprovodstroy [Urengoy Pipeline Construction Trust] are finishing the third strand of the mains that connect the facilities," says my fellow traveler--G. Levanda, deputy secretary of Urengoygazdobycha [Urengoy Gas Recovery Association] party committee. "We needed it very much. And now drillers of Urengoyburgaz [Urengoy Gas Drilling Administration] will drill the next cluster of high-flow, large-diameter wells."

A new, major step is to be taken during the third year of the five-year plan to develop the field: to increase the gas flow by almost 40 billion cubic meters, and to prepare capacity for feeding it continuously into the Urengoy-Pomary-Uzhgorod arterial. The first word here belongs to the builders of Glavurengoygazstroy [Main Administration for the Construction of Gas Industry Enterprises in Urengoy]. Last fall they started up the seventh and most powerful integrated gas-treatment installation. In December the startup and setting-up operations commenced in the first department of UKPG-8 [Integrated Gas Treatment Installation No 8].

The operations buildings are "stuffed" with equipment. The boilerhouse, an auxiliary block and a housing settlement have been turned over. Back in September there were only footings here.

Work goes on around the clock. The Komsomol-youth installer-mechanics' collectives of Nikolay Fomenko and Aleksandr Klyauzer and carpenters of Sergey Volosenko especially are laboring in shock-work fashion.

The builders hand the workers' relay baton to the operator personnel while on the move.

"We have a common task," says V. Vokhmintsev, deputy chief of Urengoygazdobycha's production control service, "everything is being done to assure that the installation works reliably beginning the first day. I am confident that that is the way it will be. We are finishing the eighth and shall be engaged with the ninth installation in earnest, where specialists and workers of Sibkomplektomontazh [Siberian Trust for the Installation of Outfitting Equipment] are already installing the industrial equipment. It must be started up in the first quarter."

...The farther from the base complex, the more forbidding the tundra. It becomes increasingly complicated to deliver materials and equipment to the new facilities, to build up the settlements for the rotating-party workers and to supply them with electricity. It is especially difficult for those who lead the way--the drillers. Workers of the Krestishchenskiy Drilling Administration of VPO Ukrgazprom [All-Union Gas Industry Association of the Ukraine] are actively helping the Urengoyers. A special party for building deep wells was established a year ago.

Brigades from the Ukraine are working under the expeditionary rotating-party method. The first collectives to come here were headed by foremen I. Bekbulatov and Ye. Shkvarskiy. Five brigades are already operating here now. The expedition's plan for the year has been overfulfilled by almost 5,000 meters. Twenty-five high-flow wells will be turned over to the operators in 1983.

It is mandatory that the task be fulfilled," says driller Pantelimonov. "If only they will get the spare parts, chemical reactants and drill tools to us on time."

Not for a minute does Urengoy's work rhythm abate. Relying upon the country's industrial might and the help of hundreds of laboring collectives of the Union republics, its workers have confidently undertaken to fulfill the complicated tasks of the third year of the five-year plan.

Pipeline Construction in Carpathians

Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 83 p 4

[Article by Iv. Batov (Transcarpathian Oblast): "In the Carpathian Passes"]

[Text] One thousand one hundred forty-six kilometers of the Urengoy-Uzhgorod gas pipeline will pass through the Ukraine's land. The most crucial section is the Carpathians. Here, during the second year of the five-year plan, the builders welded hundreds of kilometers of pipe into the strand, and part of it had been laid in the ditch. Brigades and operating flow-line operating groups joined the efforts of hundreds of people--people of various trades and nationalities. On the eve of the 60th anniversary of the forming of the USSR, laboring collectives reported the fulfillment of plan tasks and increased commitments ahead of schedule.

These successes were not easy to come by. And many difficulties still lie ahead. The parts of the route in the eastern hills of the Carpathians, in the passes, and in Transcarpathia are marked by special complexities. It is extremely difficult to deliver pipe, materials and equipment here. For it will be necessary, in addition, to conquer 11 mountain rivers and cross 18 highways and railroads, and many communication lines and previously built gas pipelines. Right now the highest pass--Magur Mountain--stands in the path of the route workers. A fresh clearing has approached it from both sides. High-powered equipment has been concentrated here.

Beside the mountain village of Yasen a pipe-welding base has been established, where a semiautomatic rotary stand, on which large-diameter pipes are joined into long pipelengths, is in operation. High-powered pipe-transporters deliver them to the route.

During the work, the builders proposed to redesign a 30-kilometer sector of the arterial in order to avoid steep slopes, and they committed themselves to reducing construction and erection time by reducing labor intensiveness. At the workers' initiative another sector also was redesigned--in the Khotimir tract, where the pipeline should go through a preserve.

The experience and the model work organization of the welders' brigade that L. Timus' heads are being widely disseminated in special inserts in the local rayon and oblast press. The shock work of this collective reminds the builders of the Bratstvo and Soyuz arterial pipelines, the Togliatti-Odessa ammonia pipeline and the Urengoy-Petrovsk gas pipeline.

The welders' brigades of V. Avanesyan and Yu. Timofeychuk, the excavators' brigade of S. Markirosyan and the bulldozer operators' brigade of B. Kozyr' also walk in the ranks of the competition winners.

Carpathian workers have begun to be happier in their work these days: the brigades that are pushing forward from Transcarpathia are getting increasingly closer to them. The quiet Transcarpathian village of Obava was transformed in mere days into a lively construction base. The welding yard has been moved here from the village of Russkiye Komarovtsy of Uzhgorodskiy Rayon. This will enable the distance for transporting welded pipeline lengths to the route's mountain sections to be cut almost in half.

"Each kilometer of gas pipeline to be done ahead of schedule!"--this is the builders' slogan. And they are keeping their word.

11409
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ELECTRIC POWER CONSERVATION ON MAIN OIL PIPELINES

Moscow NEFTYANOYE KHOZYAYSTVO in Russian No 10, Oct 82 pp 44-47

[Article by V. N. Migdalov and V. A. Yufin of MINKh and GP: "Electric Power Conservation in Main Oil Pipelines"]

[Text] Main oil pipelines are power-intensive installations. Saving even a few percent in electric power will thus make it possible to save large amounts of it for the country's needs.

Productivity varies during sequential pumping of oil products with different viscosities and densities through a main pipeline with intermediate pumping stations, creating the need to continuously regulate the stations' operating conditions to prevent pressure in the pipes from rising above their allowable strength limit or below the allowable pump cavitation conditions. Such regulation must ensure that the planned volume of petroleum products is pumped during a certain period of time (month, quarter, year) at minimum electric power consumption to drive the pumps. This problem has not been solved in pumping an arbitrary number of products at a predetermined pumping volume through a system of oil pipelines. Existing methods for optimum control of pumping station operating conditions provide only partial solutions to the problem, given a set pipeline productivity. A more general condition in operating practice is the assigned pumping volume. The goal of the oil pipeline system's operation is to provide petroleum product users with the required volumes, at the assigned time and at minimum energy cost.

A study of the problem of optimum management from this standpoint reveals that the assigned pumping volume enables establishment of the connection between the problem examined and another practically important problem of maximum pipeline productivity.

We have proposed a mathematical formulation and provided a method of solving the problem of optimum control of operating conditions of pumping stations of main oil pipelines at a given pumping volume[1]. Using the method of

1. V. N. Migdalov and V. A. Yudin, "An Algorithm and Program for Optimizing Operating Conditions of Main Oil and Oil Product Pipeline Pumping Stations by Computer," "Tr. MINKh i GP. Truboprovodnyy transport nefti i gaza" [Proceedings, MINKh and GP. Oil and Gas Pipeline Transport], vol 141, Moscow, 1979.

indeterminate Lagrangian factors, the problem of optimum management in the general case is reduced to minimizing the functional of the objective

$$\int_0^{T_{pl}} \left\{ \sum_{i=1}^{n} \frac{s_i}{\eta_i} \left[\sum_{j=1}^{k_i} A_{ij} + Q(t) \sum_{j=1}^{k_i} B_{ij} \right] \times \right.$$
$$\left. \times \psi_{pi}(t) - \lambda Q(t) \right\} dt \to \min,$$

where T_{pl} is the planned pumping period; n, the number of pumping stations; s_i, η_i, the cost per unit of electric power and efficiency of the electric drive at the i-th pumping station; k_i, the number of pumps at the i-th pumping station; A_{ij}, B_{ij}, the coefficients of the capacity characteristic of the j-th pump at the i-th pumping station; Q(t), the flow rate of fluid in the pipeline; $\psi_{pi}(t)$, the density function of petroleum products pumped by the i-th pumping station; and λ, the indeterminate Lagrangian factor.

A section of a main pipeline was calculated to check the effectiveness of the solution method and the efficiency of the algorithms. This article analyzes the calculation results.

We shall first examine a problem where a uniform petroleum product (diesel fuel) with a density of p=870 kg/m^3 and viscosity of $\nu=0.1\cdot10^{-4}$ m^2/sec is pumped through the pipeline. The pipeline has four pumping stations, each having two pumps. The distance between the pumping stations is 100 km. When pumping a petroleum product of one type, it is sufficient to do calculations for the first management stage. The remaining stages will be the same, since the density and viscosity of the product remain constant during pumping and the control need not be changed.

An analysis of the obtained results indicates that the optimum operating conditions for the pumping stations at the given parameters of the calculation example are obtained when two pumps are turned on at the main pumping station, and one at each of the remaining ones. The controlled pressure at the main station is 0.59 MPa; at the others, zero. In such conditions, when the cycle is T_{pl}=160 hr, 145,383 m^3 of petroleum product are pumped, with the given pumping volume of V_{pl}=145,000 m^3. The ES-1033 takes 11 seconds to solve the problem.

Figure 1 shows the batch arrangement for series pumping of four groups of petroleum products of different viscosity and density. (Distances between

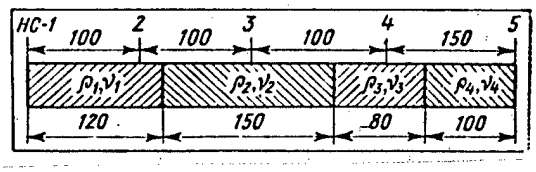

Figure 1. Batch arrangement for series pumping of four groups of petroleum products

pumping stations and length of petroleum product batches are indicated in kilometers). The parameters of the pipeline are the same as in the preceding example. The following parameters are given for the petroleum products: density P_1=850, P_2=800, P_3=750 and P_4=870 kg/m^3; viscosity $\nu_1=0.6\cdot10^{-5}$, $\nu_2=0.3\cdot10^{-5}$, $\nu_3=0.8\cdot10^{-6}$ and $\nu_4=0.1\cdot10^{-4}$ m^2/sec.

Part of this problem's solution is given in the Table.

An analysis of the solution shows that the optimum control can remain unchanged for a long time. For example, observe its tendency to change in the time interval from step 22 to step 41. The step equals 2 hr. For 18 hr, from step 22 to step 31, the pump activation combination remains constant (two pumps at the second pumping station HC-2 and one pump at each of the remaining ones). The controlled pressure at HC-2 drops from 0.32 MPa at step 22 to zero at step 29, and begins to rise at HC-3 after step 29. After two switchings at steps 31 and 32, a stable 16-hr condition is again observed from step 33 to step 41 (two pumps at HC-3 and one pump at each of the remaining ones). The controlled pressure at HC-3 during this period drops from 0.21 MPa at step 33 to zero at step 36.

The calculation results confirm P. A. Moroz's conclusions on the stability of optimum control of the petroleum product pumping process.

Step number	No. of pumps at pumping station				Controlled pressure, MPa			
	HC-1	HC-2	HC-3	HC-4	HC-1	HC-2	HC-3	HC-4
22	1	2	1	1	0	0,32	0	0
23	1	2	1	1	0	0,3	0	0
24	1	2	1	1	0	0,266	0	0
25	1	2	1	1	0	0,22	0	0
26	1	2	1	1	0	0,18	0	0
27	1	2	1	1	0	0,14	0	0
28	1	2	1	1	0	0,1	0	0
29	1	2	1	1	0	0	0,11	0
30	1	2	1	1	0	0	0,19	0
31	2	1	1	2	0,52	0	0	0,34
32	1	1	1	1	0	0	0	0
33	1	1	2	1	0	0	0,21	0
34	1	1	2	1	0	0	0,17	0
35	1	1	2	1	0	0	0,13	0
36	1	1	2	1	0	0	0	0
37	1	1	2	1	0	0	0	0
38	1	1	2	1	0	0	0	0
39	1	1	2	1	0	0	0	0
40	1	1	2	1	0	0	0	0
41	1	2	1	1	0	0	0	0

The solution to the problem examined of minimizing electric power costs at a given petroleum product pumping plan includes as a special case the solution to the practically important problem of maximum pipeline productivity. This conclusion follows from an analysis of the Lagrangian factor.

The Lagrangian factor regulates electric power cost and pipeline productivity. It follows from an analysis of the functional given that by increasing the Lagrangian factor we simultaneously raise the pipeline's productivity through the increase in power cost to drive the pumps. The controlled pressure is kept at the minimum necessary, from the condition of pipe strength.

All power resources will be exhausted at a certain value of the Lagrangian factor. The greatest volume of petroleum product will be pumped in this condition; consequently, the problem of maximum pipeline productivity can be solved. The dual nature of the problem analyzed essentially allows it to be treated as a minimax problem of games theory (Fig 2). The parameters V_{pl} indicates the pumping plan (for example examined V_{pl}=145,000 m^3); V_{max} is the maximum pipeline productivity (from calculation results V_{max}=158,000 m^3). The sensitivity area of the Lagrangian factor lies at λ_{min} to λ_{max}. In this range, the pumping volume varies given a change in the Lagrangian factor. It is thus evident that the variation area of the Lagrangian factor to achieve the pumping plan at minimum power cost is around the point λ_{pl}.

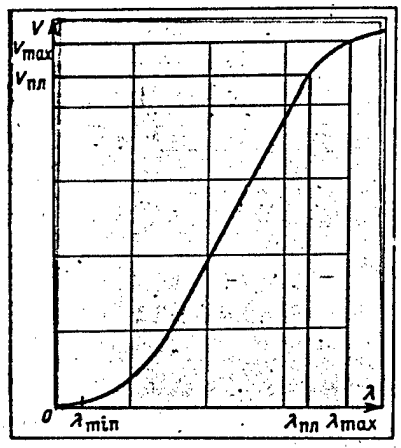

Figure 2. Pumping volume V as a function of Lagrangian factor Λ

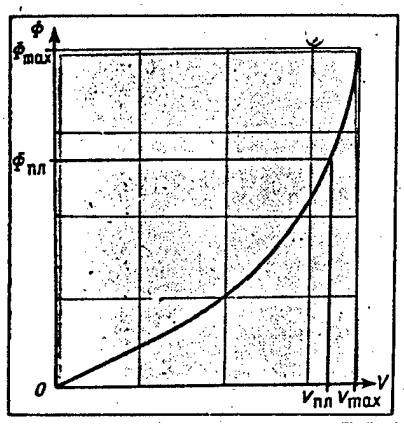

Figure 3. Energy cost Φ as a function of pumping volume V

Figure 3 shows energy cost Φ as a function of pumping volume V, based on the solution to the problem above. The parameters Φ_{max} describes electric power costs for conditions of maximum pipeline performance V_{max} (in relative units Φ=0.69), while Φ_{pl} corresponds to the minimum electric power costs to achieve the planning index V_{pl} (Φ_{pl}=0.47). The dependence Φ(V) is nonlinear. The nonlinearity is strongest at the section between the points V_{pl} and V_{max}. For example, given an increase in the plan from 145,000 to 158,000 m^3 (by 9%), the power costs grow from 0.47 to 0.69 (by 47%). An analysis of the dependence Φ(V) shows that the operating conditions on the section from V_{pl} to V_{max} are unfavorable, since even a minor increase in the pumping volume requires substantial additional electric power costs.

The method developed can be used to optimize a complex oil product pipeline system, if the pumping plan is defined at each section in such a manner that a balance of flow rates is maintained at the system's nodes.

Conclusions

1. The proposed technique makes it possible to calculate the optimum operating conditions of main oil pipeline pumping stations, ensuring minimum electric power costs with a given pumping plan of an arbitrary number of products.

2. The solution to the problem of minimizing electric power costs with a given petroleum product pumping plan includes as a special case the solution to the practically important problem of maximum pipeline performance.

3. Operating conditions of oil pipelines with outputs close to the maximum are uneconomical due to the sharply nonlinear nature of the energy cost function in the range of maximum flow rates.

4. Using the technique during on-line control of the petroleum product technological process will enable stabilization of oil pipeline operation under profitable conditions.

9875
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PIPELINE CONSTRUCTION

MANY INNOVATIONS TRIED ON SIBERIAN PIPELINES

Moscow STROITEL'NAYA GAZETA in Russian 29 Aug 82 p 2

[Article by N. Kurbatov, chief of Glavsibtruboprovodstroy [Main Administration for the Construction of Pipelines in Siberia] (Tyumen): "Records Age Rapidly"]

[Text] Tyumen Oblast is often called an experimental laboratory for the construction of mighty transport arteries and other facilities of the oil and gas industries. And this is completely correct. During the past 10-15 years the flow-line operating group and integrated-module methods of construction have had an effective run-in period and have been soundly strengthened, new types of pipeline welding have been introduced, and the technology as a whole of laying them has undergone progressive changes. Thanks to these achievements, the pace of pipeline construction, which has no counterpart in world practice, has sharply increased.

Thus, while the Americans, for example, spent 6 years laying the 1,300-kilometer Alaskan oil pipeline, we built the 2,500-kilometer gas pipeline from Urengoy to Gryazovets in a year. The pace chosen will enable the remaining four strands, which are similar to the two existing ones already laid down--the Chelyabinsk and the Petrovsk--to be laid during the five-year plan in accordance with 26th CPSU Congress decisions.

Meanwhile, the CPSU Central Committee decree, "In Regard to the Work of the Ministry of Construction of Petroleum and Gas Industry Enterprises to Reequip and to Introduce Progressive Methods of Construction Work," states that the further improvement of engineering policy and of organizatinal forms and methods for the most important construction projects of the country's oil and gas complex is necessary for fulfilling the tasks that have been set. As is the case for the whole branch, the decree has become a program document for our main administration and its subunits. It has been widely discussed at meetings of workers and specialists and at board sessions. We have defined the key problems, the solutions to which have already been initiated.

Improvement of the structure of the subunits on the route, based upon the experience of SMU-5 [Construction and Installing Administration No 5] of Severtruboprovodstroy [Trust for the Construction of Pipelines in the Northern Economic Region] occupies a special place among them. This administration has long been famous for high productivity indicators. Its collective is one of the first to test and master successfully the Sever-1 automatic resistance-welding installation, proved the

advantages of high-speed, flow-line group methods for welding, and is actively introducing the brigade contract.

As frequently happens, the leading workers' achievements also highlight typical deficiencies. Even the record indicators of the welding-and-assembly brigades of State Prize winner B. Diduk and V. Volkov, as has been clarified, were won with no few worktime losses. These were explained primarily by a lack of coordination of interdependent workers: the welders were idle, it happened, while awaiting engineering preparation of the route, and the insulation workers were idle because of the lack of a ditch or log road.

In order to concentrate worktime to the maximum, SMU-5 has taken earthmoving work upon itself since January of this year, in addition to its traditional operations (welding and laying pipe). The administration was given the appropriate equipment, and in a short time the people had been trained. The results were quick to show. In 3½ months, under extraordinarily unfavorable weather conditions, the SMU laid 80 kilometers of finished pipeline and successfully coped with the task for the season on the route. The teamwork of the whole flow-line operating group increased substantially, decisions began to be adopted more responsively during complicated situations, and the flexibility of the available forces was raised.

The example of SMU-5 prompted the transformation of our linear operations administrations into cost-accounting sectors, after reinforcing them with people and equipment and entrusting to them the whole set of operations for laying arterials. The effectiveness of the sector's efforts and their wages will now depend only upon the final result--the number of kilometers of gas pipeline that are ready for operation.

The reorganization involved other changes. As is known, our subunits are operating under extreme conditions, which reduce considerably continuous-operation time of the equipment. In order to maintain it in proper condition, repair services are needed. Those puny and uncoordinated services that do exist under the administration do not justify themselves, and, as cost-accounting sections are formed, can even become a burden, which holds back the pace of the basic operations. Therefore it was decided to create high-capacity centralized repair services--within the trusts and at industry-based settlements.

The construction of these large shops is going on full blast right now in the North.

Still another change relates to the use of old equipment. Its productivity, naturally, is lower. This entails a reduction in the pay of the people that operate it. As a result, the striving of the workers to get hold of a newer machine is certain. And the attitude toward the old machine, which often is still completely suitable, becomes one of scorn. From this also comes premature wear. We propose to change the situation: increase the pay rates for those who operate old machines. It would seem that such a relationship would help to lengthen the service life of the equipment and keep permanent personnel on them.

We face much work in improving the quality of laying gas arteries. Despite the fact that last year about 95 percent of the facilities of the linear portion and all the compressor stations were turned over with evaluations of "excellent" or "good," unfinished work, violations of the technology, and defective work, as well as design errors, often still slow work progress.

In overcoming these deficiencies, let us strengthen contact with the client. At a recent joint meeting of our main administration's board and the All-Union industrial association Tyumen'gazprom [Tyumen Gas Industry Association], a set of measures was planned for raising the quality and reliability of gas pipelinelaying. In particular, a working group for monitoring design solutions and a standing commission which will regularly go out on the route and subject the quality of the construction, installing and other operations to additional monitoring, were created, using experienced specialists.

The complexes due for early startup also are being determined in a new way. Now they will lie within the province of the flow-line operating groups, not the trusts, as had been the case. In our view, this will increase the responsibility of those who do the actual work, for the quality and the deadlines for turning over the linear portion of the pipeline and the facilities on it.

Still another sizable reserve is concealed in expansion of the potential for using the Sever-1 complex. Our request to Institute imeni Ye. Paton's specialists has been carried out--we recently received a line of equipment for welding pipe at the base. It incorporates those same principles of welding that the Sever has, but the productivity of the new unit is such that in just days one can replace 40-45 skilled welders.

An old problem and one of the most complex is conversion to the year-round construction of pipelines in our kray. It solution is still fairly far off. However, the main administration's subdivisions are now much more active between seasons in preparing crossings and passages, installing numerous crane components and erecting compressor stations. We also plan to build 150 kilometers of pipeline, twice as many as last year's, prior to 1 October (the traditional date of the beginning of intensive operations on the linear portion).

The outcome for the fulfillment of the current five-year plan tasks depends greatly upon how the main administration's subunits work in harmony in coming months.

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PIPELINE CONSTRUCTION

LIVING CONDITIONS BETTERED FOR URENGOY-UZHGOROD PIPELINE BUILDERS

Moscow SOVETSKAYA KUL'TURA in Russian 4 Jan 83 p 1

[Article: "On the Longest Route"]

[Text] We tell about the workaday life of the builders of the Urengoy-Pomary-Uzhgorod gas pipeline.

TASS correspondent A. Shchiglenko reports from Kursk: hundreds of families of the builders and operators of the Urengoy-Pomary-Uzhgorod gas pipeline are celebrating a housewarming in the settlement, the erection of which has started in Medvenskiy Rayon. In addition to the settlement's prefabricated housing, which was manufactured by the Finnish company "Ekke," a school, a store, a dining hall and a vegetable storage are being built. Erection will be completed next year.

Good recreation and living conditions are to be created in such settlements for the builders and operators of the fuel arterials," comments Deputy Minister of Construction of Petroleum and Gas Industry Enterprises G. Sudobin on the report. "Since the start of the five-year plan the ministry's enterprises and organizations have built and put into operation 3.5 million square meters of housing, of which thousands of square meters are on the route of the Urengoy-Pomary-Uzhgorod trunk gas pipeline. Tens of settlements have been erected along the route, where optimal conditions for living and recreation have been created."

No few examples of good work can be cited. There are 60 homes in the settlement that has grown up alongside the future Pomarskaya Compressor Station in the Mariyskaya ASSR. All of them have central heating and a water line, and electricity is supplied continuously. Enterprises for the amenities and trade have been opened up.

Right now we have great possibilities for improving living conditions and recreation for the builders. All the large gas pipelines are being erected in the so-called "single power corridor," not far from each other, on a land section about 100 kilometers wide. And now successive arterials will no longer have to build up and create temporary housing and to redeploy equipment. Permanent settlements with comfortable housing, stores, athletic complexes, and recreation centers are being erected on the route.

Films on Request

Branches of large Siberian motion-picture theaters are helping to make the builders' spare time on the Urengoy-Pomary-Uzhgorod gas pipeline route more meaningful and interesting. The first of these has opened in the field settlement of Yubileynyy.

The branch was organized in accordance with an agreement on creative collaboration that was concluded between the oblast motion-picture supply administration and the Glavsibtruboprovodstroy [Main Administration for Pipeline Construction in Siberia] collective. The builders took care of a hall for showing the films, and the suppliers are sending the films by helicopter.

Such branches exist at all 24 settlements on the route. A showing of film at the request of socialist competition winners will go into effect.

V. Zhilyakov
Nadym, Tyumen Oblast

Sketches on the 'Fuel Trails'

An exhibit of the works of RSFSR Distinguished Artist painter N. Ovchinnikov from Cheboksary and line drawings of veteran of labor P. Yakushev from Kuybyshev has been opened in the builders' settlement at the town of Tsivilska. Both artists worked in the collective of Integrated Flow-Line Operating Group No 1 of Kuybyshevtruboprovodstroy [Kuybyshev Pipeline Construction Trust], among the welders and earthmoving equipment operators, making drawings of the workday routine and creating portraits of advanced workers.

Artist N. Ovchinnikov was represented by a series of picturesque and graphic line drawing portraits of the gas-pipeline builders and by sketches and studies taken from life. P. Yakushev exhibited 30 line engravings about construction of the gas pipeline and sketches taken from life. The construction workers looked at the canvases and saw themselves, their comrades in labor, places on the route and their housing settlement in the drawings.

P. Ivanov
Chuvashskaya ASSR

The Library Is in Order

Works of multiple-nationality Soviet literature have been entered on readers' library cards for the builders of the Urengoy-Pomary-Uzhgorod gas pipeline. Here, on the Mari segment of the arterial, the first library on a voluntary basis has been opened up. It is based upon a thousand books that were sent as gifts by book-lovers to the builders of the gas pipeline system.

Mari artists, painters, men of letters and film-world workers were included during execution of the program of cultural sponsorship over the collectives that are erecting most important facilities.

V. Sarlakov
Mariyskaya ASSR

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