

**INFORMATION REPORT**

CENTRAL INTELLIGENCE AGENCY

This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

50X1-HUM

**C-O-N-F-I-D-E-N-T-I-A-L**

COUNTRY **USSR**

REPORT [redacted] 50X1-HUM

SUBJECT **Review of 1962 Oil and Gas Industry and Transportation**

DATE DISTR. 17 Apr 63

NO. PAGES 1

*TE (Production of Crude Oil and Natural Gas, pipeline construction)*

REFERENCES

DATE OF INFO. [redacted]

PLACE & DATE ACC [redacted]

*government policy towards mining and power*

THIS IS UNEVALUATED INFORMATION

50X1-HUM

[redacted] a 22 page document entitled "USSR, Review of 1962 Oil and Gas Industry and Transportation."

The subject study is organized as follows: 50X1-HUM

**I. INTRODUCTION**

- A. General
- B. Fuel and Energy Industry
- C. Communist Party Membership
- D. 1963 National Budget

**II. EXPLORATION FOR OIL AND GAS**

- A. Ural-Volga
- B. Ukraine
- C. Baku
- D. Turkestan, S W
- E. Western Siberia
- F. Central Siberia
- G. North East and Far East Siberia

**III. DRILLING AND EQUIPMENT**

**IV. CRUDE OIL PRODUCTION**

**V. NATURAL GAS PRODUCTION**

**VI. CRUDE OIL AND PRODUCTS PIPE LINES**

**VII. NATURAL GAS PIPE LINES**

**VIII. REFINERY RUNS**

OFFICIAL USE ONLY

- end -

50X1-HUM

STATE	ARMY	NAVY	AIR	FBI	AEC						
-------	------	------	-----	-----	-----	--	--	--	--	--	--

**C-O-N-F-I-D-E-N-T-I-A-L**

**INFORMATION REPORT**

**CONTROLLED** **NO DISSEM ABROAD**

DISSEM: The dissemination of this document is limited to civilian employees and active duty military personnel within the intelligence components of the USIB member agencies, and to those senior officials of the member agencies who must act upon the information. However, unless specifically controlled in accordance with paragraph 8 of DCID 1/7, it may be released to those components of the departments and agencies of the U. S. Government directly participating in the production of National Intelligence. IT SHALL NOT BE DISSEMINATED TO CONTRACTORS. It shall not be disseminated to organizations or personnel, including consultants, under a contractual relationship to the U.S. Government without the written permission of the originator.

**Page Denied**

U. S. S. R.  
REVIEW OF 1962 OIL  
AND GAS INDUSTRY AND TRANSPORTATION

INTRODUCTION

January, 1963, statistics, released by the Soviet Union, disclosed the following basic data of 1962 operations.

I. GENERAL

1. Population as of 1-1-63	223.0 million
2. Working force	68.4 "
3. Gross National Income	165.5 billion rubles
4. 1962 Capital Expenditures:	
By Central Government	30.5 billion rubles
By Local Government	4.0 billion rubles
5. Retail trade, up 6.1%	86.3 billion rubles
6. Foreign trade, up 11.5%	11.8 billion rubles

	<u>1961</u>	<u>1962</u>	<u>1963</u>
	(Billions of rubles)		
7. National Income	78.1	84.7	87.7
National Expenditures	76.3	82.7	86.2

II. FUEL AND ENERGY INDUSTRY

	<u>1962</u>	<u>% over 1961</u>	<u>1963 Targets</u>
1. Crude oil production, Bbls. /day	3,720,000	12	4,100,000
2. Natural gas production, Billion cu. ft. /day	7.1	24	8.9

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

	<u>1962</u>	<u>% over 1961</u>	<u>1963 Targets</u>
3. Coal, million tons	517.0	4	522.0
4. Electric Power, billions kwh	369.0	13	407.9

### III. COMMUNIST PARTY MEMBERSHIP

1. Total party membership	10,000,000
2. In Industry, Transportation, Construction	3,655,000
3. Agriculture and Farms	2,000,000
4. Others	4,395,000

Discussions and comments on industrial operations in Soviet press, trade and technical publications lead one to believe that Russian industries have many difficulties because of bureaucracy, planning troubles, poor equipment and machinery, delays in receiving equipment and materials on site, shortages of spare parts, etc. In spite of these, though, the Soviet economy, on average, has progressed somewhat better than planned for the first four years of the 1959-1965 plan. Industries like oil, steel, and cement did better than planned, while others like agriculture, chemical, construction and machinery have lagged behind the planned targets. The faster growth of population in the Soviet Union is evidently contributing to the difficulties as it has been reported that as of January 1, 1962, the population of the Soviet Union was 4,000,000 over the estimate for that date, and as a result of this all production targets are being revised upward.

To improve planning, management, and efficiency of industrial operations, the Soviet Government in late fifties has delegated management

-2-  
FOR OFFICIAL USE ONLY

of its industries to regional entities (sovnarhoz), but have retained budget and planning control in Moscow, including research, inter-regional investigations and 15 to 20 percent of construction. This delegation of authority while improving industrial efficiency and progress, has also created new problems in management of national economy. First, the Central Government has found that regional management was interested mainly in local and regional problems and showed only a general interest in national problems and aspirations. They were more interested, for instance, in building homes, school, hospitals, clubs, etc., rather than increasing output of products, equipment, or materials needed elsewhere in the Soviet Union or for export trade. As a result, the money budgeted for enlargement of plants was often diverted to social and cultural improvements, thus delaying the completion of needed industrial plants which in turn forced other delays and dislocations in the total economy.

The situation apparently became so serious by 1962 that the Soviet Government was forced to make changes in its industrial setup. The new order organized the country into 47 economic regions in place of 67 old regions. This was then followed by placing the responsibility of planning and execution of planning on the Communist Party for a more effective control of National Economy. The Party was organized into separate agricultural and industrial commissions. Following that the Central Government announced the following organizational changes:

FOR OFFICIAL USE ONLY

1. It delegated to Gosstroy control and execution of all construction in the Soviet Union. Previously, Gosstroy accounted for only 15-20 per cent of construction. With this the Government placed all design institutes and design offices and organizations under Gosstroy with a view of increasing efficiency and elimination of duplication. It has been indicated that there were some 400 construction design institutes and over 1,000 design offices, contributing to duplication.

2. It organized the Central State Industrial Commission to co-ordinate technology. This Commission is an authority on all new machinery.

3. It issued guide lines for industry and agriculture. The more important of which were:

- a. Organize optimum operations plantwise as well as country-wise. This was aimed at elimination of unprofitable plants and operations.
- b. Remove from management those who either don't understand economics or don't pay any attention to it.
- c. Place greater responsibility on working units and organize collective management of plants.
- d. Organize production plant committees to be operated by the Communist Party. Duties of this committee are advisory on projections and plans.
- e. Give directors right to lay off any employee except chief engineer, chief comptroller and chief economist. The latter three are to be appointed by higher organization.

FOR OFFICIAL USE ONLY

- f. Management has to be practical, technical and political.
- g. Divert greater funds to agriculture. 1963 budget up 18 percent over 1962.
- h. Increase spending in chemical industry in 1963 by 36 percent over 1962. The increase is because of the failure of industry to meet planned targets in the first four years of the present plan. The 1963 effort is to be concentrated on completion of unfinished plants. The following figures are illustrative of delayed construction in chemical industry:

1960 - completed 78% of planned targets  
 1961 - completed 82% of planned targets  
 1962 - Completed 68% of planned targets

#### IV. 1963 NATIONAL BUDGET

The Soviet national budget for 1963 by categories is as follows:

Industry and agriculture	34.5 billion rubles
Social and cultural (health, education, etc.)	31.0 billion rubles
Defense	13.9 billion rubles
Government expense	1.1 billion rubles
Unidentified	<u>5.7 billion rubles</u>
	86.2 billion rubles

#### EXPLORATION FOR OIL AND GAS

The 1962 exploration target moneywise was 11 percent higher than those of 1961. The budget funds were provided for increased activities in geological and geophysical, core drilling and exploration drilling. The 1961 exploration budget was underspent by 6.9 percent and the drilling

**FOR OFFICIAL USE ONLY**

FOR OFFICIAL USE ONLY

was about 83.3 percent of the planned target. In view of the industry's inability to increase drilling efficiency in the first three years of the plan and gradual increases in drilling depth, it is reasonable to assume that the Soviet oil industry was hard pressed to make its drilling target in 1962.

There have been indications that the Soviet exploration effort in the last year or two has been reaching a point where crude oil production has been catching up with discovery rate. This evidence has been confirmed by an official in the December, 1962, issue of Geology of Oil and Gas stating that the relation of reserves to crude oil production has been lowered below safe point of 20 to 1, a ratio that has been used by Soviet planners in projecting its oil industry growth. There also have been complaints by geologists that the exploration effort was not on par with projected targets.

In the first three years of the plan (1959-1961) the oil industry has exceeded crude oil discovery targets by about 5 percent. In 1961, however, additions to oil reserves were only 98.6 percent of the target in categories AB and 83 percent in categories ABC. It has also been reported that in the first four years the success of finding large oil fields and the efficiency of exploration drilling in general had fallen below the previous years. During the four years, 1959-1962, industry drilled a total of 5,179 wells (wildcat and delineation), resulting in 2,652 oil and gas wells, or 51.2 percent of the total. By comparison, in 1961 the industry drilled only 1,447 wells, of which only 554 or 38.3 percent were productive

FOR OFFICIAL USE ONLY



wells. It would be noted that the number of exploration wells drilled in 1961 was below the 1,728 wells average for the three years. It also has been stated that in a number of oil and gas producing regions there is insufficient reserve of ready-to-drill structures. With geophysics as a prime method of structure finding in the Soviet Union, the seismic equipment, its manufacture, and its use in the field has been receiving critical treatment. It would appear that the quality of seismic equipment presently in use is very unsatisfactory in search of less pronounced anomalies, or deep seated structures. The complaint is that the seismic equipment coming from the production lines has no magnetic recording or automatic processing means and that research to develop new and better equipment is poorly organized. Likewise, exploration drilling rigs, drill pipe, mud pumps and well testing equipment were criticized as causes for an apparent failure for not meeting the planned exploration targets.

To date industry has not released annual information on 1962 exploration work and discoveries. During the year, however, the press and technical publications have provided the following bits of information on 1962 accomplishments.

URAL-VOLGA. In this area a large share of exploration effort was devoted to discovery and proof of discoveries in the Orenburg Region (south of Urals and southeast of Kuybyshev). This area is considered to be as good as the neighboring Kuybyshev area. Here industry is operating 32 seismic parties and in 1962 drilled 600,000 ft. of exploration

FOR OFFICIAL USE ONLY

hole. Perm is another area that received greater attention in 1962 than in prior years. There were discoveries south of Perm in 1961, and this year's work is a follow-up of last year's success.

Geological and geophysical investigation of Moscow syncline has disclosed that the crystalline basement has a core of 3,000 to 3,500 meters and is prospective for oil and gas. In 1962 it received more intensive geological and drilling attention.

UKRAINE. Exploration effort in this area is failing to find sufficient gas reserves that are necessary to maintain a 20 to 1 reserve production ratio. In 1961 industry found only 39 percent of gas reserves planned for discovery during the year. Geologists are suggesting an increase in seismic parties from 57 in 1962 to 80 in 1963 and to a minimum of 110 in 1965.

BAKU. Oil and gas prospect of this area are either at great depths or offshore. To date offshore operations have been concentrated in development of Neftiania Kamni oil field, which is producing in the order of 21,000 bbls./day. In addition to this the Soviets have new discoveries at (a) South Bank, (b) live island, and (c) Muddy Sopka. Thus far the Soviets have no stationary platforms or floating structures for deep offshore drilling. They have presently in design stages one floating and one stationary platform for drilling in depths up to 190 ft. One gas distillate discovery was reported in 1962 for the Baku area.

TURKESTAN, S. W. Turkestan is proving to be an important base for future oil supplies. Here Soviets have reported an oil discovery that tested in the order of 1,460 bbls./day.

**FOR OFFICIAL USE ONLY**

FOR OFFICIAL USE ONLY

South Mangyshlack, where two large discoveries were reported previously, remains active, but geologists have been complaining that insufficient budget funds have been allotted for exploration of this highly prospective area.

WESTERN SIBERIA. A 1962 gas discovery of 35.0 million cu. ft. /day was reported near the mouth of the River Taz. In the northern part of Western Siberia there are two ridges. North Ridge is south of Obskaya Guba and Taz Ridge which runs parallel to the Taz River. The basement here is deeper and the Taz discovery may lead to developing this area into an oil and gas province. But because of the location and poor transportation facilities, the development of this region would come after the prospective areas of Ishim-Berezovo trend and of middle Ob region have been prospected and developed.

In May, 1962, an oil discovery was announced 120 kms. north of Barabinsk (location not known).

1962 plans have provided for drilling of 757,000 feet of exploration hole in Western Siberia, and by 1965 exploration drilling is scheduled to rise to 1,463,000 ft.

In April, 1962, oil was discovered at Kamennoi some 180 km. to the north of Shaim, the first discovery of Western Siberia, with the well testing 3,650 bbls. /day. Numerous structures were reported on the Shaim-Berezovo trend, and the area is scheduled to go on production by the end of 1965.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

CENTRAL SIBERIA. Oil and gas investigations of this area, often referred to as Eastern Siberia or Irkutsk amphitheatre, have been restricted in early years to the southern portion of the Central Siberian platform and to the west of the Angarsky Ridge trending in north-south direction. After unsuccessful results in the west, exploration effort was switched to the east side of the ridge where it led to the discovery in March of 1962 at Markovo, on the Lena River some 600 kms. to the north of the city of Irkutsk. The Markovo #1 produced 1,569 bbls/day on 16 mm bean and back pressure of 600 lbs./sq. in. Markovo structure has been reported to be 25 km. long and 2.5 to 6 kms. wide. Original reservoir pressure was 3,175 lbs., gravity of oil 38.5 API, and a sulphur content of 0.8%.

NORTH EAST AND FAR EAST SIBERIA. With small exploration effort going on in the middle of the Lena River, on Kamchatka and Sakhalin Islands, oil industry made no reports on discoveries in those areas. It would appear from reports that exploration for oil and gas on Kamchatka is about to be discontinued and efforts will be concentrated on drilling for steam. On Sakhalin Island, most of the shallow structure has been tested, and industry is trying to find and test deep-seated structures. Seismic reflections from deep horizons on the island are poor and therefore, efforts of finding deep structures thus far have not been very successful.

#### DRILLING AND EQUIPMENT

Drilling target for 1962 included 16.9 million ft. of exploration drilling and 13.6 million ft. of development drilling, or a total of 30.5

FOR OFFICIAL USE ONLY

-10-

million feet. Footage drilled in 1961 totalled 27.3 million ft., or in the order of 95 percent of the planned target. The 1962 figures have not been released. On the basis of past performance, however, it is doubtful that the 1962 drilling target will be met.

The 1962 technical drilling reports continued to indicate that drilling equipment and drilling technology problems are far from being resolved and, in fact, are becoming more complicated and difficult. In areas of easy drilling to moderate depths, up to 2,000 mtrs. -- which includes Ural-Volga-operations -- the Soviets apparently are making slight progress in improving drilling efficiency. But in areas of deeper drilling (North Caucasus, Old Baku, Middle Asia and parts of Siberia) drilling crews have difficulties due to lack of good drilling rigs, poor drill pipe and bits, and lack of suitable transportation and road building equipment.

The principal source of difficulties in deep drilling is industry's dependence on turbo-drill technique. Soviet experience of drilling deep wells in old Baku area disclosed to them that high rotating turbodrills are very ineffective in drilling of deep formations. Industry has tried to develop slow-speed turbodrills, but research thus far has failed to provide one for the industry. Use of rotary technique below 2,000 meters indicated the possibility of reducing drilling time by 50 percent. Application of rotary drilling technique brought on drill pipe troubles. This is exemplified by increasing number of fishing jobs in the 1959-1961 years. Drilling rigs in this period had some 3,000 fishing jobs which were estimated

~~FOR OFFICIAL USE ONLY~~

to cost 54.3 million rubles. In 1961 fishing costs were in the order of 19.1 million rubles. The best quality of Soviet drill pipe is similar to N-80 of U. S. From reports it would appear that industry is not getting heavy rigs scheduled for delivery under the 7-year plan. Models of the new rigs are still being tested and are not available in any quantity. The same is true of large size mud pumps and high pressure blow-out preventers.

Meanwhile, reports indicate discovery of large reserves of oil at depths of 1,700 to 3,000 meters in Ural-Volga, North Caucasus, Azerbadjan and S. W. Turkestan. Existing heavy rigs are good at best for 2,000 to 2,500 meters drilling and below that depth become inefficient. From 1956 to 1961 the Soviet oil industry drilled a total of 851 deep wells below 3,000 meters, and of these only 115 were drilled below 3,500 meters. The 1963 drilling program provides for the use of diamond bits in 200 wells, and this gives an indication of the number of deep wells to be drilled during the coming year. The depth record in the Soviet Union is 5,041 meters.

#### CRUDE OIL PRODUCTION

In 1962, the Soviet oil industry produced 186,000,000 tons, or at the rate of 3,720,000 bbls./day. Of the above total the Russian Federated Republics (except Ukraine, Baku and Middle Asia) produced 152,000,000 tons, or approximately 80.8 percent. Improvements in productive capacities of North Caucasus and of S. W. Turkestan have contributed to the attainment of the 1962 production targets. S. W. Turkestan is now

FOR OFFICIAL USE ONLY

expected to produce in 1965 in the order of 10.0 million tons vs. 7.5 million initially scheduled. North Caucasus is now expected to produce in 1964 at the 1965 rate. Oil fields of Ukraine also were doing better than planned with this region producing in 1962 some 1,000,000 tons over the target.

In 1959-1962 period, or the first four years of the plan, the oil industry produced in the order of 14,000,000 tons over the planned quantities. In this connection it may be well to note that during these four years the oil industry has failed to meet drilling footage targets to the extent of several million feet. On the other hand, industry apparently did well in exploitation of oil fields by application of stimulation techniques of fracking, acidizing and water injection. The success of the industry to exceed its production targets, in the first four years of the plan, can be attributed largely to the intensity and application of modern petroleum technology in the newly developed fields of Ural-Volga region.

Crude oil reserves of the Soviet Union as of January 1, 1963, are estimated to be in the order of 26.2 billion barrels, having a ratio of reserves to annual production of 19 to 1 (1962 rates). This ratio was derived from January 1, 1961, base of 20 to 1 and reported deficiency of discoveries in 1961 and 1962.

During the last year industry released information which gives the following estimate of oil wells in operation in 1961.

**FOR OFFICIAL USE ONLY**

	<u>Number</u>	<u>Bbls./w/day</u>
Flowing Wells	6, 570	375
Pumping (Electric and Rod)	26, 150	30
Gas Lift	1, 335	62
	<u>34, 055</u>	<u>97 (average)</u>

The 1963 crude oil production target has been set at 205.0 million tons or at a rate of 4, 100, 000 bbls. /day.

### NATURAL GAS PRODUCTION

Natural gas production in 1962 rose to 75.2 billion cu. meters, up 16.2 billion from 58.98 billion cu. meters in 1961. The 1963 natural gas production target is set at 90.0 billion cu. meters.

Manufactured gas production for 1962 has been estimated at 1, 955.7 million cu. meters, which is an approximate average rate during the last three years.

The 1961 gas consumption by users in the Soviet Union was reported as follows:

Community heating	11.1%
Industrial	58.3%
Electric power	27.4%
Transportation	.2%
Agricultural	.1%
Pipe line and losses	2.9%
	<u>100.0%</u>

Natural gas production and its demand are being attributed to cheapness of gas in comparison to other fuels. The following average price of fuels, for instance, was cited to indicate advantages of gas in the White Russian Republic.

FOR OFFICIAL USE ONLY



~~FOR OFFICIAL USE ONLY~~

	An average for Republic	Average price of standard ton of fuel (7,000 kk), Local		
		at Polotsk	at Minsk	at Vitebsk
(Given in Rubles per Ton)				
Natural gas	5.69	9.73	3.72	7.25
Heavy fuel oil(Mazoot)	8.9	8.79	9.01	8.59
Donetz coal	16.28	16.61	16.45	16.40
Carpathian coal	21.36	21.86	21.23	21.90
Torf	15.96	20.43	16.37	14.77

In the course of discussion it was stated that the average wholesale price of gas to the industries in 1962 has been in the order of 12.1 rubles per 1,000 cu. meters. Wholesale prices of gas have been under study and a new price structure is about to be adopted and announced. The recommended prices are as follows:

Class I	Gas producing regions	9.5 rubles/1,000 cu. mtrs.
Class II	Areas along main gas lines	11.0 "
Class III	Ukraine, Cheliabinsk, Sverdlovsk	12.0 "
Class IV	Moscow, White Russia, Lithuania	13.0 "
Class V	Areas of high fuel cost, such as Leningrad, Central and East Siberia	15.0 "

In contrast to the above wholesale prices the following average cost of finding, producing and transporting was reported for the year of 1961:

Average finding cost	.40 rubles/1,000 cu. mtrs.
Average producing cost	.53 "
Average transportation cost	2.07 "
	<u>3.00</u> "

Natural gas reserves of the Soviet Union as of January 1, 1962, in AB categories, were reported to be 72.0 trillion cu. ft., and in ABC categories, in the order of 86.6 trillion cu. ft. Three largest gas fields

~~FOR OFFICIAL USE ONLY~~

(North Stavropol, Shebelinka and Gazli) hold 42 percent of gas reserves.

Gas reserves of the 12 other large fields amounted to 20 percent of gas reserves. Thus, 15 of the largest gas fields of the country back up 62 percent of the reserves of the entire Soviet Union.

At present the gas industry has in operation 250 gas fields including gas-cap fields. In the first three years of the plan the Soviets found 83 gas fields with a reserve of 42.8 trillion cu. ft., or 6.7 percent more than the planned target. This good showing was due to an unusually successful rate of discovery in the year 1959, as 1960 additions to gas reserves in AB categories were only 70 percent of the target figures for the year, and in 1961 only 66.6 percent. Of the 16 exploration regions, only 6 have met their gas discovery targets. Saratov-Volgograd, Ukraine, Turkestan and Azerbaidjan have failed to make planned additions to gas reserves in each of the first three years. The feeling is that 1962 will be another year of deficiency in all (ABC) categories. Presently, Ukraine gas reserves are in the order of 14.5 trillion cu. ft., and at the 1963 production rate the gas reserves amount to only 14 years of supply vs. an accepted standard rate of 20 to 1.

Fourteen gas fields of Western Siberia have a gas reserve of 2.5 trillion cu. ft. Pipe line to move this gas to Serov in Urals is in an initial stage of construction.

#### CRUDE OIL AND PRODUCTS PIPE LINES

Planned construction of crude and product pipe lines have lagged behind the targets in the first four years of the plan. In the period

**FOR OFFICIAL USE ONLY**

1959-1961 construction amounted to only 90 percent of the planned targets.

Work in 1962 was also behind the plans. Consequently, 1963-1965 pipe line transportation loads have been reduced by 73.0 billion ton-kms. and this load was shifted to RR transport. Delays have occurred in European portions of Russia as well as in Siberia. In Siberia completion of the Krasnoyarsk-Irkutsk portion will be delayed and Irkutsk refinery is to be supplied by tank cars. The same is true of Novo-Yaroslavl refinery. Delays also occurred on Nickolaev-Bryansk line.

Tichoretsk-Tuapse line (240 kms. of 20 inch) was to be completed in 1962. No mention of completion has been made as yet. Tichoretsk-Novorossiisk 20-inch pipe line has been scheduled for completion in 1963.

Prorva-Koraton (61 kms. of 20-inch) was completed and placed into operation in 1962.

Construction of Drujba pipe line is taking a major portion of Soviet effort. In 1962 it was planned to lay 1,000 kms. on Kuybyshev-Penza and Mozyr-Brody sections. Almetevsk-Kuybyshev section (273 kms.) has been completed and placed into operation. The Kuybyshev-Penza portion of the line was to be placed into operation in the last quarter of 1962. Kuybyshev-Cizran part of the latter section was placed into operation. No information is available on progress in construction on remaining portion of Kuybyshev-Penza or Mozyr-Brody sections. It has been announced that three fields that are to feed the Drujba pipe line are Romashkino, Muhanovo and Kuleshevski.

**FOR OFFICIAL USE ONLY**

**FOR OFFICIAL USE ONLY**

By the end of 1961 the Soviet Union had in operation 17,705 kms. of crude and products lines. In this total 10,861 kms. were in sizes larger than 20 inches.

In February, 1963, Provda reported that the Czechs were working on their Bratislava-Zaluji (450 kms.) pipe line. The first stage is to begin on Moravian Plato and proceed west to Zaluji (near the town of Most) in western part of Czechoslovakia. To date 60 kms. were laid on Praha-Zaluji portion and 30 kms. in southern Slovakia. By 1966 all Czech refineries will be connected to the pipe line.

#### NATURAL GAS PIPE LINES

During the four years 1959-1962 the gas industry has placed into operation 15,695 kms. of trunk pipe lines. An average rate of additions in the last three years was in the order of 4,370 kms. per year and at this rate of construction the industry is in the position to meet the originally planned target of 39,300 kms. by the end of 1965.

The work on Ural-Gazli line is continuing, and the latest statement by the gas industry indicates confidence that the first string to Cheliabinsk will be completed by the end of 1963. This appears to be on the optimistic side in view of the poor deliveries of 40-inch line, compressors and turbines.

In July, 1962, the Soviets reported laying of 476 kms. of this line in the first six months of the year. Since the 1962 planned target was 900 kms. it is possible that by the end of the year construction crews reached the Chalkar, their target point by the end of the year. This then

**FOR OFFICIAL USE ONLY**

**FOR OFFICIAL USE ONLY**

would leave 1, 100 kms. for completion in 1963. The delays in completion of this line could come from shortages of 40" pipe and inability to get on time FT-700-5 turbine-compressor units.

Presently the Soviets have three pipe mills making 40" line pipe. One of these is at Jzdanov's works producing spiral weld pipe. Here, the plans are to have third production lines by the end of 1963, and construction is lagging behind the scheduled time. The second mill is at Novo-Moscow works which is producing a longitudinal weld pipe. Here, production is insufficient to meet the demand. The mill is behind on deliveries and the quality of pipe is poor. The third mill is in the process of installation at Cheliabinsk works. This mill is to go into operation in the first quarter of 1963, but thus far is not operating. Its output is to be 10, 000 tons in 1963 and it is being rushed to start operations in April, 1963.

The first string of Cheliabinsk-Gazli line is designed for installation of 7 stations of 5 FT-700-5 units or a total of 35 compressor-turbine units. Only 25 of these units are scheduled for delivery late in 1963. Thus, it would seem that scheduling is very tight and the Soviets would be very lucky to make only partial deliveries of gas through the line in 1964.

In other construction the industry was scheduled to complete, in 1962, the Vilno-Riga, Shebelinka-Poltava, Kohta-Yarva to Tallin (second line), Krivoy Rog to Kherson, Mannibaevo to Zainsk and Belsk to Sumi pipe lines.

**FOR OFFICIAL USE ONLY**

## REFINERY RUNS

An article in Oil Economy, issue of December, 1962, on refining stated that if the oil industry is to meet demands of the Soviet economy in oil products, and particularly in light products, the average annual additions to refining capacity in 1963-1965 must exceed average refining additions for 1959-1962 by a factor of 2.1. At the same time catalytic refining, hydrofining, de-paraffination of diesel fuel, additives and catalysts must also be stepped up. During this same period installations of thermal cracking units were to be discontinued.

With increases in refining runs for 1959-1962 being on average in the order of 12,500,000 tons per year it would mean that 1963-1965 additions would have to be in the order of 26,500,000 tons per year. As it is extremely doubtful that the industry can meet this problem in the next three years, the Free World must expect an increase in Soviet crude oil exports and possible decrease in products.

Recent press releases on Polotsk refinery indicated that installation at atmospheric-vacuum unit, thermal cracking unit and electric plant have been completed and that the cracking unit will become operational in March or April of this year. Press releases also stated that Massovetz refinery at Plotsk, Poland, and Scwedt refinery of East Germany will have final capabilities of 2,000,000 tons per year.

In studying the available information on 1962 operations of the Soviet oil industry one gets the following impressions:

20  
**FOR OFFICIAL USE ONLY**

1. A rapid and sustained increase in crude oil production of Soviet Union in the last four years was a result of discovery of a number of large fields in Ural-Volga region in late fifties and intensive exploitation of these fields through pressure maintenance by injection of large quantities of water during the first four years of the seven year plan.

2. In the last four years industry was unable to make the planned discovery targets of oil and gas reserve additions.

3. Annual production reserves ratio in the last year or two have been lowered below 20 to 1 which is considered by the Soviet Union to be safe operating ratio and had been used in their planning of industry operations.

4. In the last four years the Soviet oil industry has not been able to increase efficiency of drilling rigs. In fact, it seems that industry strained itself to maintain it at a point reached by 1959.

5. New deep drilling equipment including mud pumps, electrodrills, etc., that were scheduled for deliveries in the first four years of the present plan have not reached production lines as yet. Only a few of such rigs were manufactured and are now undergoing field tests.

6. The two pipe mills that can make 40-inch line pipe are in operation, but a third one, after delays, is now scheduled to go on production in March or April of this year. Two presently operating mills are behind on deliveries and there are shortages of 40-inch pipe which is badly needed in completion of Gazli-Cheliabinsk and Drujba pipe lines.

FOR OFFICIAL USE ONLY

7. In drilling below 2,000 meters the industry needs better drill pipe and bits. In the manufacture of drill pipe the industry uses steel which has physical properties only slightly better than that used in the U. S. in manufacture of N-80 pipe. In deep drilling with turbodrill the industry is trying to use diamond bits.

8. To improve management of industries the Soviet Government re-organized the country into smaller number of economic districts, centralized all construction under one ministry in Moscow and made the Communist Party (central and local) responsible for planning and realization of planned production.

9. In preparation of production targets for 1959-1965 the population of the Soviet Union was underestimated. As of January 1, 1963, population of the Soviet Union was 4.0 million over the estimate, and it has been stated that changes in some production targets are to be made accordingly.

10. Drujba pipe line was originally scheduled for operation by the end of 1963. Recent press releases on this pipe line give no indication of this possibility or of the present thinking on the completion date. It would appear that, with indicated shortages of 40-inch line pipe, Kuybyshev-Mozyr section cannot be completed this year. At best, this line can be placed into operation in the last half of 1964.

11. The Soviet oil industry has a crude oil production target of 205.0 million barrels for 1963, or a rate of 4,100,000 bbl./day. It now appears that the industry can easily achieve its 1965 planned target of 4,800,000 bbls./day. In fact, 1965 crude oil production could be in the order of 5,000,000 bbls./day.

March 25, 1963  
Ivan S. Salnikov

FOR OFFICIAL USE ONLY

-22-